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IRRADIATED ERGOSTEROL POISONING

REPORT OF TWO CASES

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During the past five years there have been an increasing number of clinical reports regarding the use of massive doses of vitamin D in the treatment of rickets, tetany, rheumatoid arthritis and various allergic states.[1]

We shall make no attempt to evaluate the therapeutic efficacy of vitamin D or its concentrates in these conditions but shall rather put out a suggestion of caution regarding the possible ill effects that may follow, under certain circumstances at least, the employment of massive doses of the vitamin.

That vitamin D and the irradiated sterol concentrates may produce toxic reactions has been recognized for many years. Numerous writers have described the occurrence of anorexia, loss of weight, nausea, vomiting, abdominal pain, diarrhea, muscular weakness, headaches, polyuria and polydipsia in both man and animals. Acute intoxications in animals have resulted in coma and death.[2] Only two or three deaths have been described in man. These will be referred to later. It is of interest that most of the patients who have been given massive doses of vitamin D have shown only minor evidences of intoxication and it is perhaps for this reason that the more severe consequences of massive therapy have not been appreciated. Thus McLean[3] says "the dangers of the toxic effects of these substances, while real, have been somewhat overemphasized," and Steinberg[4] echoes him.

It is thus to encourage an attitude of respect for the potential dangers which may lie in the employment of large doses of ergosterol, under certain circumstances at least, that we present these 2 cases in which a major manifestation of ergosterol intoxication of a serious nature was a prominent and interesting feature.

From the Medical Clinic, the School of Medicine, Johns Hopkins University and Hospital.

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2. Stacey, R. S.: Treatment of Low Calcium Tetany with Calciferol, Lancet **2**: 656-658, 1935. Ross, S. G., and Williams, W. E.: Vitamin D Intoxication in Infancy, Am. J. Dis. Child. **58**: 1142 (Nov.) 1939. Klein, I. J.: Effects of Massive Doses of Irradiated Ergosterol, J. A. M. A. **92**: 621 (Feb. 23) 1929. Harris, L. J., and Moore, T.: Hypervitaminosis D and Vitamin Balance, Biochem. J. **22**: 1461, 1928. Vrtiak and Lang.[1] McLean.[3] Abrams and Bauer.[11]

3. McLean, F. C.: Activated Sterols in the Treatment of Parathyroid Insufficiency, J. A. M. A. **117**: 609-619 (Aug. 23) 1941.

4. Steinberg, C. L.: Massive Doses of Vitamin D in Chronic Arthritis, J. Lab. & Clin. Med. **24**: 17-24, 1938.

REPORT OF CASES

CASE 1.—*History.*—J. W., a white man aged 22, was admitted to the medical service of the Johns Hopkins Hospital on July 23, 1941. The history revealed only the usual childhood diseases. The system review was entirely negative. He had never had urgency, frequency, nocturia, hematuria or oliguria. He stated that he had never had venereal disease. He was employed in an airplane factory and had never been exposed to any toxic agents. On July 2 he had been struck by an automobile and had fractured his left femur and left clavicle. His leg was immobilized in traction and on July 8 he was given a large dose of a preparation of ergosterol containing 50 per cent calciferol and 50 per cent of a mixture of lumisterol, tachysterol and toxisterol. During the succeeding twelve days he received approximately 750,000 international units of the preparation daily. This medication was frequently given in a glass of milk. Throughout this period he ate a diet which contained 1.5 to 2 Gm. of calcium daily. At the end of twelve days the patient complained of nausea followed by abdominal pain and later of vomiting, which became almost intractable. At this time the urine was examined and found to contain many hyaline casts and red blood cells. It is significant to note that urine examinations prior to the administration of vitamin D were entirely normal.

He was therefore admitted to the medical service, where the physical examination was essentially negative but for a fractured left femur and left clavicle. Blood studies showed red blood cells 3,730,000, hemoglobin 8.5 Gm., hematocrit 33 per cent volume of packed cells and white blood cells 7,600, with a normal differential count. The anemia was thought to be due to blood loss at the time of the accident. On admission the urine had a specific gravity of 1.006 and contained no sugar or albumin. The sediment showed red blood cells 1 to 2, white blood cells 1 to 2 and numerous hyaline casts. The Sulkowitch test for hypercalcinuria was 4 plus. Chemical examination of the blood revealed a serum calcium level of 15 mg. per hundred cubic centimeters, serum phosphorus 3.8 mg. per hundred cubic centimeters, blood nonprotein nitrogen 52 mg. per hundred cubic centimeters and serum carbon dioxide combining power 72.7 volumes per cent. Chart 1 illustrates the subsequent course of events.

Course.—Fluids were forced and the patient was provided with a low calcium diet (0.2 Gm. of calcium intake daily). Nausea, vomiting and abdominal pains disappeared on the second day and he remained symptom free thereafter.

Attention is called to the prolonged elevation of the blood calcium. It is interesting to note that there was no concomitant depression of the blood phosphorus. A transient degree of renal impairment accompanied the hypercalcemia. This was evidenced by the elevation of the blood nonprotein nitrogen and the depression of the phenolsulfonphthalein and urea clearances. We should like to suggest, however, that this functional impairment was not by any means entirely transient despite the rapid return of the phenolsulfonphthalein and urea clearance to normal values, for even after weeks had

passed the patient still could not concentrate his urine above 1.020. This we believe is evidence of continued and significant renal damage. Throughout this entire period the daily urinary output was 1,200 to 2,000 cc. After the first five days the urinary sediment was entirely clear. The blood pressure was never elevated above 120 systolic and 80 diastolic. The electrocardiogram remained normal. X-ray examination showed no calcium in the kidneys or other tissues and no osteoporosis. Biopsy of the sternum on August 5 showed normal bone marrow. Six months after the accident the fracture had not yet healed and orthopedic consultants felt that there was delayed healing and poor callus formation.

CASE 2.—*History.*—W. S., a Negro aged 22, was admitted to the medical service of the Johns Hopkins Hospital on July 25, 1941. His general health had been excellent and he had never had any serious illnesses. He did not have nocturia, hematuria, dysuria or frequency. On June 30 he was struck by an automobile and sustained a compound fracture of the left tibia and fibula and also of the lower end of the left femur. The leg was put in traction and a cast applied. On July 8 he was started on approximately 750,000 international units daily of a preparation of irradiated ergosterol containing 50 per cent calciferol and 50 per cent lumisterol, tachysterol and toxisterol. This preparation was frequently given in milk. On July 25 he was taken with nausea and vomiting. The diagnosis of irradiated ergosterol intoxication was suggested and he was admitted to the medical service at this time. Physical examination revealed no abnormalities other than the fractures. On admission examination showed red blood cells 4,800,000, hemoglobin 12 Gm., hematocrit 35 per cent volume of packed cells, white blood cells 7,450. On admission the urine had a specific gravity of 1.005 and contained no sugar or albumin. There was an occasional white blood cell and cast. There were no red blood cells. Chemical examination of the blood revealed a serum calcium level of 18 mg. per hundred cubic centimeters, serum phosphorus 2.9 mg. per hundred cubic centimeters and blood nonprotein nitrogen 47 mg. per hundred cubic centimeters. Chart 2 illustrates the patient's subsequent course.

Course.—Fluids were forced and the patient was given a diet containing approximately 0.2 Gm. of calcium daily. In twenty-four hours the nausea and vomiting subsided and he remained symptom free.

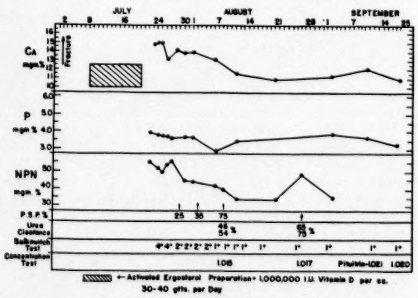

Chart 1.—Observations in case 1.

One is struck by the remarkably prolonged elevation of the serum calcium. As in the first case the phosphorus was not reduced in the presence of hypercalcemia but remained at a normal or slightly elevated level. Azotemia was slight and of short duration. There was also a transient depression of the phenolsulfonphthalein excretion and urea clearances and a persistent inability of the kidneys to concentrate urine. It is of interest that on November 27 (twenty weeks following the administration of the drug) the patient returned for a check-up. Although the phenolsulfonphthalein excretion was 80 per cent and the urea clearance 120 per cent of standard, he was unable to concentrate the urine above 1.010. An interesting feature which this patient

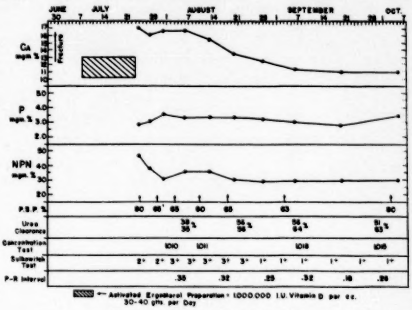

Chart 2.—Observations in case 2.

showed was remarkable prolongation of the PR interval. This has been described in various conditions associated with hypercalcemia. X-ray studies did not show calcification in the urinary tract or soft tissue. There was no osteoporosis. The patient is still in a cast because of delayed healing.

COMMENT

In these two cases the administration of repeated large doses of irradiated ergosterol was associated with a prolonged hypercalcemia and persistent impairment of renal function.

Although postmortem examination of rats, rabbits, monkeys and dogs that had been given large amounts of vitamin D have shown renal damage of varying degrees,[5] similar postmortem lesions have been described in observations on only 3 patients, all infants, who had been given comparable doses of the vitamin. These cases have been described in detail by Thatcher,[6] Malmberg[7] and Putscher.[8] But we should not therefore conclude that renal damage is a rare form of ergosterol intoxication. Let us but remember that polyuria and nocturia have been repeatedly mentioned by numerous writers as being manifestations of vitamin D intoxication. Unfortunately, however, none of these clinical investigators have reported studies of renal function.

The question presents itself Why did these 2 patients develop evidences of renal impairment? What particular circumstances may have led to it? At the very outset we should admit that it is perhaps impossible to give a completely satisfactory answer. But at least we can surmise.

Was it the total quantity of ergosterol which had been given that was responsible? This appears to be unlikely, since much larger doses have been given to other patients without any signs of intoxication. Thus Vollmer[9] gave 2,260,000 and 1,260,000 units of vita-

5. Steck, Deutsch, Reed and Struck.[10] Chown, Lee, Teal and Currie.[11] Ham.[12]
6. Thatcher, Lewis: Hypervitaminosis D with a Report of a Fatal Case in a Child, Edinburgh M. J. **38**: 457, 1931.
7. Malmberg, N.: Acta. paediat. **8**: 364, 1928.
8. Putscher, W.: Ztschr. f. Kinderh. **92**: 269, 1929.
9. Vollmer, H.: Distribution of Vitamin D in the Brain After Repeated Administration of Massive Doses, Arch. Pediat. **58**: 9, 1941.

min D_3 respectively to 2 children who were about to die of a tuberculous infection, and nothing attributable to hypervitaminosis was found post mortem. Steck, Deutsch and Reed [10] have shown that 20,000 units per kilogram daily may be given to dogs or to patients for indefinite periods without evidences of intoxication. However, there is no unanimity of opinion on this question. Bauer and Abrams [11] reported that in a series of patients which they studied the administration of more than 200,000 units daily resulted in evidences of intoxication of a more or less severe degree, among them being polyuria, polydipsia and nocturia. There would therefore appear to be factors other than dosage at play.

Bauer [11] and others have called attention to the great individual variation from patient to patient in the dose required to produce intoxication. An amount insignificant to 1 patient may make another acutely ill. A seasonal variation with reactions much more frequent in the summer time is well established.

Diet is also an important factor, since the degree of hypercalcemia produced by irradiated ergosterol is to an important extent conditioned by the amount of calcium ingested [12] and we feel strongly that the renal damage is occasioned solely by the hypercalcemia.

Not the least important point is the manner in which the ergosterol is administered. Lewis [13] has demonstrated that vitamin D or ergosterol given in milk has ten times the potency of that given in oil. And Bauer [11] points out that the lack of toxicity reported by some observers following the administration of large doses of ergosterol may be accounted for on this basis.

We should like to urge strongly that the fact that these 2 young, vigorous men were immobilized in casts probably played a major role in facilitating the hypercalcemia; for immobilization alone through atrophy of disuse, as emphasized by Albright,[14] may produce hypercalcemia with resultant renal damage in a young active person. When to the hypercalcemia so produced one adds the hypercalcemic effect of the irradiated ergosterol, an accumulation of factors can result which may prove extremely damaging to the kidneys which have to excrete it.

We had, therefore, several factors at work in these 2 cases which we suggest played a part in producing the clinical picture: large dosage of irradiated ergosterol, a diet of high calcium content, the administration of irradiated ergosterol in milk, the administration of irradiated ergosterol in summer time and finally immobilization in casts. Which of these factors played the most important part in giving rise to the intoxication seems a matter of debate.

Having considered why the intoxication occurred in these cases, one may next ponder over how it occurred.

There are at present two schools of thought concerned with the mechanism of vitamin D or ergosterol intoxication. One holds that all the symptoms of intoxication are due to hypercalcemia with consequent precipitation of calcium salts in the various affected tissues of the body. The other contends that hypercalcemia is not at all necessary and that injury and necrosis of body tissues can occur in the complete absence of hypercalcemia or of the deposition of calcium salts. Reed [15] has called attention to the fact that hypercalcemia of an extreme degree may occur in the complete absence of any evidence of intoxication. Conversely, he states that he has seen severe intoxication even to the lethal stage in the presence of a perfectly normal serum calcium. Ham,[16] on the other hand, in a series of experiments on rats demonstrated that no degeneration of tissues preceded the precipitation of calcium salts and thought therefore that ergosterol had no specific effect on the tissues but produced damage solely through supersaturation of the blood serum with calcium and consequent salt precipitation. With ample evidence to prove both suppositions, one is free to choose sides.

In these 2 cases we are particularly interested in attempting to picture the nature of the lesions produced in the kidneys, for that is where the damage was done. The most striking functional abnormality which these 2 patients evidenced was a persistent inability to concentrate their urine, and note that this functional impairment persisted in the presence of a normal phenolsulfonphthalein excretion and urea clearance, and in the absence of albuminuria or hematuria. One would therefore expect to find the chief anatomic alterations in the renal tubules.

Is there any evidence to support this supposition? In animal experiments Steck, Deutsch and Reed [10] found that the kidney was the organ which was most vulnerable to ergosterol intoxication. These investigators described renal injury as due to calcium deposition which began in the tubules and thence spread to involve the entire kidney. Chown, Lee, Teal and Currie [17] in experiments on rabbits noted deposition of calcium within and without tubules with consequent obstruction, which finally resulted in atrophy of some nephrons and dilatation of others. They also noted necroses and inflammatory reaction which occurred about the tubular concentrations. Thatcher [6] described the pathologic findings in the kidneys of an 18 month old infant who died following the administration of large amounts of viosterol. These consisted of calcium deposits in the lumens of the collecting tubules with inflammatory reaction about them and fatty degeneration in the cells of the convoluted tubules.

It is our opinion that the primary pathologic agent in these 2 cases was the hypercalcemia which per se damaged the renal tubular epithelium, the only permanent sequelae of this injury being an inability to concentrate urine. In a personal communication Longcope states that he has seen exactly similar sequelae following sulfonamide nephritis,[18] a condition in which there is abundant evidence in both man and animals of extensive tubular involvement.

10. Steck, I. E.; Deutsch, A. B.; Reed, C. I., and Struck, H. C.: Intoxication with Vitamin D, Ann. Int. Med. **10**: 951-963, 1937.

11. Abrams, N. R., and Bauer, Walter: Treatment of Rheumatoid Arthritis with Large Doses of Vitamin D, J. A. M. A. **111**: 1632-1638 (Oct. 29) 1938.

12. Bauer, W.; Marble, A., and Claflen, D.: Studies on the Mode of Action of Irradiated Ergosterol: I-IV, J. Clin. Investigation **11**: 1-63, 1932. McLean.[5]

13. Lewis, J. H.: Clinical Experience with Crystalline D: Influence of Menstruum on Effectiveness of the Antirachitic Factor, J. Pediat. **6**: 362, 1935.

14. Albright, Fuller; Burnett, C. H.; Cope, Oliver, and Parson, William: Acute Atrophy of Bone (Osteoporosis) Simulating Hyperparathyroidism, J. Clin. Endocrinol. **1**: 711, 1941.

15. Reed, C. I.; Struck, H. C., and Steck, E.: Vitamin D, University of Chicago Press, 1939.

16. Ham, A. W.: Mechanism of Calcification in the Heart and Aorta in Hypervitaminosis D, Arch. Path. **14**: 613 (Nov.) 1932.

17. Chown, Bruce; Lee, Margaret; Teal, John, and Currie, Robert: Experimental Production of Nephritis in Rats by Means of Parathyroid Hormone and of Vitamin D, J. Path. & Bact. **49**: 273-290, 1939.

18. Antopol, William; Lehr, David; Churg, Jacob, and Sprinz, Helmuth: Changes in the Urinary Tract and Other Organs After Administration of Three Sulfanilamide Derivatives, Arch. Path. **31**: 592-602 (May) 1941. Clemenko, D. R., and Wright, A. W.: Effects of Continued Administration of Sulfathiazole and Sulfapyridine in Monkeys, ibid. **32**: 794-817 (Nov.) 1941. Gross, F., and Cooper, F.: Urolithiasis Medicamentosa, Urol. & Cutan. Rev. **44**: 4, 1940. Pepper, D. S., and Horack, H. M.: Crystalline Concretions in Renal Tubules Following Sulfathiazole Therapy, Am. J. M. Sc. **199**: 674-679, 1940. Stryker, W. A.: Nature of Renal Lesion with Sulfapyridine Therapy, J. A. M. A. **114**: 953-954 (March 16) 1940.

SUMMARY

1. Two patients showed evidence of intoxication which followed the administration of massive doses of irradiated ergosterol.

2. The circumstances which may have contributed to this intoxication were the amount of drug which was given, the vehicle in which the drug was given, the calcium content of the diet, the factor of immobilization and the season of the year.

3. Sudden skeletal immobilization through its effect in producing hypercalcemia in young and vigorous persons undoubtedly played an important part in the intoxication.

4. Hypercalcemia alone appears responsible for the renal damage manifested by these patients.

5. Because of the type of functional impairment shown by these patients, principal damage is thought to have occurred in the renal tubular epithelium.

6. The functional impairment found in certain cases of sulfonamide nephritis is similar.

7. Massive doses of irradiated ergosterol, at least under certain circumstances, present potential danger.

THE EFFECT OF PREGNANCY ON THE COURSE OF MYASTHENIA GRAVIS

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Pregnancy may and often does cause profound changes in patients with myasthenia gravis. In some instances during part or all of the nine months of childbearing symptoms disappear entirely; more rarely the disease increases in severity in the early months, and in a few instances during this period abortions for therapeutic reasons have been considered justifiable. More rarely remission does not take place during the entire pregnancy.

The subject has received scant attention in the literature, and few instances of pregnancy occurring in patients with myasthenia gravis have been reported. This is partly due to the rarity of the disease. At the Boston Lying-In Hospital only 1 patient with myasthenia gravis was registered in more than 63,268 admissions between 1900 and 1940. Most textbooks on obstetrics, moreover, do not mention the disease.

Myasthenia gravis, or grave muscle weakness, is a disease characterized by an abnormal state of fatigability of particular voluntary muscle groups. The disease was clearly described in the last two decades of the nineteenth century and widely recognized as a clinical entity after 1900. The symptoms commonly observed in the order of their frequency, as pointed out by Viets and Schwab,[1] are ptosis of the eyelids, often with accompanying diplopia; dysphagia, dysarthria and weakness of the muscles of the jaw; general muscular involvement and neck muscle fatigue. The progress of myasthenia gravis is characterized by spontaneous remissions and relapses.

Aided by a grant from Hoffmann-LaRoche, Inc.
From the Myasthenia Gravis Clinic, Massachusetts General Hospital.
Read in part before the Boston Society of Psychiatry and Neurology, Dec. 11, 1941.

1. Viets, H. R., and Schwab, R. S.: The Diagnosis and Treatment of Myasthenia Gravis, J. A. M. A. **113**: 559-562 (Aug. 12) 1939.

Myasthenia gravis, however, is much more common than was formerly thought. We have notes on 95 patients in the records of the Myasthenia Gravis Clinic at the Massachusetts General Hospital observed since 1935; more than 70 of them have come under direct observation by one of us (H. R. V.) either at the clinic or in private practice. Of this total, we have data on 8 patients who have had one or more pregnancies during the course of their illness; in 2 instances delivery took place while the patient was under our care. It is on this series of cases that we are reporting, first reviewing the previous literature.

REVIEW OF THE LITERATURE

That pregnancy might affect the disease was suggested by Sinkler [2] as early as 1899, when myasthenia gravis was little known; his patient improved during her sixth pregnancy and had an easy labor, but symptoms developed again a few days after delivery. The disease was of seven years' duration, with three known relapses in its course. Punton [3] in 1899 reported an example of the disease beginning shortly after a prolonged and difficult labor. In 1901, Burr and McCarthy [4] described a patient with severe myasthenia gravis, who at the end of three or four months of her second pregnancy died of respiratory paralysis. The disease had its onset about one and one-half years before death.

In 1902 Goldflam,[5] who wrote one of the earliest descriptions of myasthenia gravis, in 1893,[6] continued his account of 1 of his patients, unmarried when first observed ten years before (5, p. 323, case III). She was married in 1897 and, by 1902, at the age of 32, had borne three children. For five years before her marriage the disease had progressed by relapses and remissions. Her first child was born in January 1898, but her exact condition during the pregnancy is not known. Goldflam implies that she was well, for he states that three months after delivery symptoms returned. After a relapse of two months she had a second remission lasting two years. A second pregnancy, coming during this period, terminated normally in May 1900. By implication, again it is presumed that she was well during her second pregnancy, since it is stated that she suffered a relapse a little more than three months after she was delivered, and by August 1900 her condition was considered serious. In her third pregnancy her condition improved immediately. At the end of eight months she gave birth to a premature child who died. Three months later the symptoms of myasthenia gravis returned, although in a milder degree. Goldflam was much impressed by the patient's good health during pregnancy and had a standing pleasantry with his patient: "You should always be pregnant to remain in continuous good health."

The next report came from Kohn,[7] whose patient manifested symptoms of myasthenia shortly after her fourth pregnancy. By the end of the fourth month of

2. Sinkler, W.: Asthenic Bulbar Paralysis, J. Nerv. & Ment. Dis. **26**: 536-544, 1899.
3. Punton, J.: Asthenic Bulbar Palsy, with Report of a Case, J. Nerv. & Ment. Dis. **26**: 545-553, 1899.
4. Burr, C. W., and McCarthy, D. J.: Asthenic Bulbar Palsy, Am. J. M. Sc. **121**: 46-52, 1901.
5. Goldflam, S.: Weiteres über die asthenische Lähmung, nebst einem Obductionsbefund, Neurol. Centralbl. **21**: 97-107, 154-160, 208-214, 252-258, 303-310, 347-353, 390-397, 447-452, 490-496, 1902.
6. Goldflam, S.: Ueber einen scheinbar heilbaren bulbärparalytischen Symptomencomplex mit Betheiligung der Extremitäten, Deutsche Ztschr. f. Nervenh. **4**: 312-352, 1893.
7. Kohn, R.: Myasthenia gravis pseudoparalytica und Gravidität, Prag. med. Wchnschr. **28**: 242-244, 1903.

her fifth pregnancy her symptoms were so severe that the pregnancy was interrupted, only to have the patient die seven days later.

A review of the whole subject of paralysis occurring during pregnancy was published by von Hösslin [8] in 1904 and 1905. He concluded that pregnancy, in spite of Goldflam's report, had a strikingly unfavorable effect on patients with myasthenia gravis. Both labor and nursing, moreover, were made more difficult, and during a second pregnancy the disease was more severe than during the first. He advised patients with myasthenia gravis not to become pregnant and thought that abortion was of doubtful therapeutic value. His deductions were soon confirmed by Warrington [9] and particularly by Gemmell.[10] These two authors observed the same patient during different pregnancies. Her illness began during her first pregnancy and her symptoms increased during the entire period. Two years later a second pregnancy occurred, but the condition of the patient in the meantime is not stated. As term approached the patient became exhausted by trivial acts and suffered from severe attacks of dyspnea. As death seemed imminent, Gemmell successfully delivered the child by cesarean section at term. Improvement in the mother's condition was noted immediately. Indemans,[11] about the same time, fearful of his patient's life during her second pregnancy, induced an abortion at the end of twenty weeks. Except for reports by Dupré and Pagniez,[12] indicating that myasthenia gravis may begin during pregnancy, and the observation by Pietro [13] that the disease may begin after pregnancy, the subject remained in this confused state for many years.

It was not until 1915 that another case of myasthenia gravis associated with pregnancy was reported in the literature. In that year Tilney [14] gave the history of a married woman aged 24 whose first symptom occurred about the fourth month of her first pregnancy. Dysphagia, diplopia and general weakness developed. Although she became worse during pregnancy, she was delivered at term after a normal labor of five and one-half hours. A severe attack of respiratory embarrassment occurred two days before delivery and again four days after labor. One month later she suddenly died of respiratory paralysis. At postmortem examination, in addition to a persistent thymus, Tilney demonstrated an adenoma of the anterior lobe of the pituitary. She had shown no symptoms of pituitary deficiency and the relation of the tumor to her disease was unexplained.

In 1916 Fearnsides [15] described a patient, aged 20 in 1903, whose symptoms of myasthenia gravis were of two years' duration. Married at the age of 20, her condition at the time was precarious, for she had to remain in bed a week before her marriage on account of weakness in the arms and legs. In 1931, Laurent [16] observed this same patient and reported on the effects of repeated pregnancies. During the first pregnancy her health was unchanged, although she had had symptoms of myasthenia gravis three years before. During the second pregnancy she had a complete remission for the last three months, only to suffer a relapse in eight days. In each of the five succeeding pregnancies she became worse. Four of them resulted in miscarriage at three, five, five and six months; one was terminated by a therapeutic abortion at six months. As none of the last five pregnancies, however, progressed beyond the sixth month, we do not know whether recovery with complete remission might not have taken place during the last three months, an event which occurred during the second pregnancy. On two occasions the patient recovered rapidly after a miscarriage.

Wolff [17] in 1924 reported another case. Symptoms began three weeks after the first pregnancy and became more severe during the second, until abortion was carried out at the end of the fourth month.

Freiberg [18] in 1931 reported the development of myasthenia gravis during a third pregnancy. Reuter,[19] also in 1931, observed 11 patients with myasthenia gravis; on 1 there are excellent notes regarding the effects of pregnancy. Patient 2, aged 30, had symptoms after a second pregnancy resulting in a miscarriage at three months. In the third pregnancy his patient was much improved and had no symptoms from the third month on. Her weakness recurred after delivery, but when she became pregnant for the fourth time she again showed improvement. The disease returned in a more severe form after delivery and terminated fatally.

Mortara [20] in 1938 described the symptoms of a patient aged 22 whom he observed in two pregnancies. The first, characterized by severe vomiting in the first months, ended at term with normal delivery. In the eighth month, however, the patient showed signs of myasthenia gravis, particularly weakness of the neck muscles. For a week after delivery she was better, but in the next three weeks she grew rapidly worse, with dysphagia, dysarthria and ptosis. Forced to give up nursing her baby at the end of ten weeks, she was in a state of relapse for six months, at one time being unable to get out of bed. Somewhat recovered, she again became pregnant; her symptoms increased at the same time and the fetus was taken at the end of two months. In spite of the therapeutic abortion she did not improve for another period of six months, at which time she had a slight remission only to suffer relapse again a month later.

There are a number of other notes in the literature bearing on the problem. Milhorat,[21] for instance, states that 1 of his patients had a remission during pregnancy. After the termination of the pregnancy by abortion the symptoms returned. Silverstein [22] also observed improvement during pregnancy.

Finally Wilson [23] in his textbook on neurology briefly described a patient as follows: "Symptoms lighten to

8. von Hösslin, R.: Die Schwangerschaftslähmungen der Mütter, Arch. f. Psychiat. **38**: 730-861, 1904; **40**: 445-576, 1905.

9. Warrington, W. B.: Myasthenia Gravis with Ophthalmoplegia: With Some Observations on Ocular Palsies, M. Chron. **40**: 319-324, 1904.

10. Gemmell, J. E.: Cesarean Section in a Case of Myasthenia Gravis, Gravida, J. Obst. & Gynec. **7**: 260-265, 1905.

11. Indemans, J. W. M.: Myasthenia Gravis Pseudoparalytica, Nederl. tijdschr. geneesk. **11**: 503-512, 1905.

12. Dupré, E., and Pagniez, P.: Myasthénie hypotonique mortelle, Nouv. iconog. de la Salpêtrière **18**: 247-254, 1905.

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a surprising degree with the first pregnancy, recurring some months after the puerperium and again remitting with a second, though less well."

Since the use of prostigmine for myasthenia gravis, first advocated by Walker [24] by injection and by Everts [25] by oral administration in 1935, only 1 case in which pregnancy occurred in the course of this disease has been reported, by Tabachnick.[26] His patient had symptoms of myasthenia gravis after her fourth pregnancy. During her fifth pregnancy her symptoms were severe in the first four months; she was given prostigmine with improvement. She did not have a remission during the last five months of pregnancy [27] but required twice as much prostigmine bromide at term as was needed at midterm. The maximum dose was 12 to 14, 15 mg. tablets by mouth a day. Delivery, early in 1938, was easy and rapid. In the first four months of the puerperium she improved somewhat but never was able to give up prostigmine entirely. Up to 1941 she progressed, with moderate remissions and relapses, never reducing her intake below 6 to 8 tablets. Her child was in normal health in the fall of 1941, nearly four years after birth.

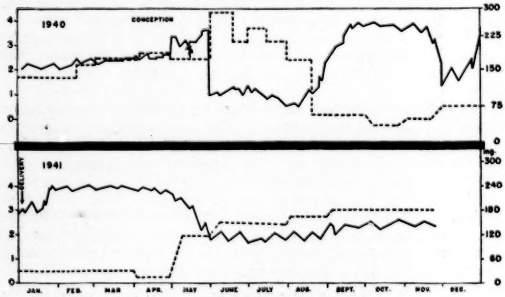

Chart 1 (case 1).—Relation of subjective symptoms to prostigmine intake during pregnancy in myasthenia gravis covering a period of two years, 1940 and 1941. The subjective symptoms are plotted as a solid line, based on the Schwab and Skogland scale of 0 to 4 (A Method of Evaluating the Effect of Treatment in Neuromuscular Disorders, Journal-Lancet **61**: 401-404 [Oct.] 1941 as indicated in the left hand margin. The scale reads: 0 = bad, 1 = poor, 2 = fair, 3 = good, 4 = excellent. The prostigmine bromide intake, in milligrams, taken by mouth daily, as indicated in the right hand margin, is recorded in a broken line.

A further case has been observed by Richards [28] in the Department of Medicine, College of Physicians and Surgeons, New York. Symptoms of myasthenia gravis first developed in 1937 when the patient was 25. At first intermittent, the disease became more severe and stationary in 1938. Prostigmine treatment was begun in May 1939. By January 1940 she was much improved and in an almost complete remission. In the spring of 1940 she suffered a relapse. Her pregnancy began in August. In the first three months she was not improved but fairly well maintained on prostigmine. The pregnancy was interrupted by abortion at the patient's request (Presbyterian Hospital, New York) at about three months.

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REPORT OF OUR CASES

CASE 1.—*History.*—Mrs. Evelyn A. H., a housewife, of American-Canadian parentage, was first seen in March 1932 at the age of 22. She was born in November 1909, the second of nine children; her parents and all her sisters and brothers were living and well in 1941. Except for childhood diseases she had never been sick until the onset of her present illness in 1931. Her catamenia became regularly established at the age of 14. For a number of years before her marriage in 1930, at the age of 21, she had worked hard in a mill as well as at home.

First Pregnancy.—Her first pregnancy resulted in a miscarriage at slightly over six months, in June 1931. The child lived four hours. Four weeks later she returned to work at the mill. Two months after the miscarriage, in August 1931, she had her first symptom of myasthenia gravis—diplopia. This was followed in October and November by dysarthria, dysphagia and nasal regurgitation of liquids. General weakness, difficulty in chewing and pains in the arms, neck and chest were added to the other symptoms. By the time of her first visit to the Massachusetts General Hospital in March 1932 she had lost 20 pounds (9 Kg.). She improved only slightly when taking ephedrine sulfate, 24 mg. (⅜ grain) by mouth four times a day.

Second Pregnancy.—While still having symptoms of myasthenia gravis, she again became pregnant in September 1932. During the first month of pregnancy her symptoms were severe; when seen by the neurologic staff, November 17, she was much improved. By the end of the third month a complete remission had occurred and she was doing everything that she had done while in normal health. For the remainder of the pregnancy she felt even stronger than normal and had none of the usual symptoms associated with the pregnant state. She was delivered by cesarean section of a 4½ pound (2,041 Gm.) child May 10, 1933. She did not nurse the baby, who after a difficult period on artificial feeding grew rapidly and is now (1941) strong and well.

Interval History.—The patient was in perfect health until August 1933 but then relapsed into a state of myasthenia gravis (i. e. three months after delivery) beginning with the same initial symptom, diplopia, as at the original onset of her disease. In a week her symptoms were as severe as before her second pregnancy in March 1932. Her condition became stationary for nearly three years, from 1933 to 1936, apparently aided somewhat in the last two years of this period by the use of strychnine. She was, however, always incapacitated, having to grind up her food because of difficulty in mastication, and retiring at 8 p. m., often so weak that she could not pull up the bedclothes. During the summer months there was slight improvement. Ephedrine, first taken in March 1932, was not continued after her second pregnancy.

Returning to the Massachusetts General Hospital in August 1936, she was given prostigmine bromide, 15 mg. (¼ grain) by mouth, six times a day; her prostigmine test was scored as 45 out of a possible 72. From then until April 1940, a period of four years, she was seen about once a month at the Myasthenia Gravis Clinic. The steadiness of the course of her disease may be estimated by her intake of prostigmine; her maintenance dose varied in this period from 8 to 13 15 mg. tablets a day, the average being 9 or 10. Three slight relapses and one equally mild remission occurred, but the course was in general unremitting and at no time was she able to reduce the prostigmine to below 7 tablets a day. Five times she was taken off medicine for purposes of testing; on three occasions she suffered a severe relapse, but on two she did better than was expected, the last being when pregnant. Her catamenia was somewhat irregular; sometimes her symptoms of myasthenia gravis were slightly exaggerated four or five days before a period, only to return to their usual mildness when the period began.

In general, her condition was vastly improved in the prostigmine era (1936-1940) when compared with the preprostigmine period (1933-1936). Except for ptosis and some diplopia, under prostigmine treatment she was only slightly handicapped by her disease and was able to carry on her household duties.

Third Pregnancy.—Her last period occurred April 8, 1940 (chart 1). In May she felt well, taking 12 tablets a day, but in June there was a moderate relapse requiring 17, and later 20 tablets. Her worst time was about the eighth or ninth week of her pregnancy, and from then on she improved rapidly. By the end of the fifth month she was in definite remission and from the sixth to the ninth month in complete remission. Although the remission was somewhat delayed, as compared with the second pregnancy, the completeness was the same, for indeed she had the same feeling of being stronger than normal. She was delivered by cesarean section of a premature, healthy baby (December 31, Boston Lying-In Hospital), weighing 4 pounds 13½ ounces (2,200 Gm.). A month later she was taking 2 to 3 tablets of prostigmine a day in a cond[illegible] of slight relapse. By October 1941 she was back to her ma[illegible]tenance dose of 8 to 10 tablets a day.

CASE 2.—*History.*—Lillian P. R., married, aged 22, of French-American parentage, entered the Massachusetts General Hospital June 10, 1937. She was born May 10, 1915 and was healthy during childhood. The catamenia began at 13. She was married in 1935 at the age of 20.

First Pregnancy.—This occurred immediately after marriage and a healthy child was born March 30, 1936 (Milford Hospital). During her pregnancy she was "continually falling," but there were no other signs of weakness until she had diplopia and dysarthria as her first symptoms of myasthenia gravis in March 1937. These symptoms, with ptosis, dysphagia, general weakness and difficulty in chewing, were all present on admission. Her prostigmine test on July 20 was 50 out of a possible total of 62. She recovered rapidly when taking 5 15 mg. tablets of prostigmine bromide by mouth daily. From June 1937 to April 1938 she was maintained in a satisfactory condition on 4 to 6 tablets of prostigmine bromide a day, but in May 1938 she suffered a slight relapse which was controlled by increasing the prostigmine bromide to 8 tablets daily.

In the fall of 1938 she was able to reduce the amount to 6, but again in December 1938 and January 1939 she required 8 tablets (chart 2).

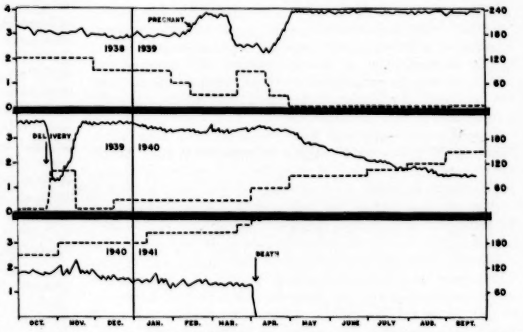

Chart 2 (case 2).—Relation of subjective symptoms to prostigmine intake during pregnancy in myasthenia gravis covering a period of three years, 1938 to the patient's death in 1941. The subjective symptoms are plotted as a solid line, based on the Schwab and Skogland scale.

Second Pregnancy.—Late in January she was taken off her medicine for a prostigmine test and for motion picture recording. After forty-eight hours without medicine she had only slight weakness, and even the administration of quinine sulfate 0.65 Gm. (10 grains) did not produce symptoms. A state of partial remission was therefore recorded. By February 14 she required only 3 tablets to feel completely well. At this time pregnancy was suspected. The diagnosis of pregnancy was confirmed in March, her last period being on February 6. During the first trimester she required 2 to 4 tablets, during the second and third none at all. Full remission thus occurred in the last six months of pregnancy. Normal, but slow, delivery took place October 14 (Milford Hospital).

Subsequent History.—Diplopia occurred the day after the baby was born and lasted for one month. This was followed by another remission, lasting until July 1940, a period of nine months. During this time she had slight general weakness and diplopia during her monthly periods; these symptoms were controlled by a few tablets of prostigmine bromide. By August 1940 she had suffered a severe relapse, requiring 10 tablets daily. She continued to fail in spite of increasing doses of prostigmine bromide, with ephedrine sulfate and potassium gluconate. From December 1940 to February 1941 she was under almost constant observation in the ward of the hospital. Finally she could be maintained only on 15 tablets of prostigmine bromide a day. Death from respiratory paralysis occurred at home March 8, 1941 while the patient was suffering from a severe bronchitis and septic sore throat. A persistent thymus, with hyperplasia, was demonstrated at autopsy.

CASE 3.—Mrs. Bertha O., a housewife, of American-Canadian parentage, was first seen in July 1937 at the age of 28.

She was born in July 1909; she had not been ill except for a mild attack of poliomyelitis at the age of 3 years, without residual paralysis. She was married in 1929 and her first, second and third pregnancies, in 1931, 1933 and 1936 respectively, resulted in normal deliveries (Boston City Hospital). In March and June 1936 she had attacks of acute cholecystitis, and in July her gallbladder was removed.

Shortly after the operation, in August or September, the patient had her first symptoms of myasthenia gravis. The initial symptoms were general weakness and extreme fatigability of both the arms and the legs. When the weakness was at its worst the patient could not write, go up or down stairs or get in or out of bed. In June 1937 she had an attack of diplopia lasting two weeks. The prostigmine test was found positive at the Boston City Hospital in July.

Her fourth pregnancy began in April 1937 and delivery took place on Jan. 4, 1938 (Boston City Hospital). Labor lasted sixteen hours; delivery was accomplished without difficulty and the child was normal. Her symptoms of myasthenia gravis during the period of pregnancy cannot be definitely stated. The patient thinks that she was "worse" and yet some of her symptoms, such as dizziness, scotomas, nocturia, edema and vomiting, were clearly the result of the pregnancy and not due to the myasthenia gravis. General weakness, however, was present and she used a cane to walk. She took 4 or more tablets of prostigmine bromide each day during her pregnancy, although the amount is not exactly known; she may have taken as many as 12. At times there was difficulty in chewing and swallowing, and during the latter part of the pregnancy she could not comb her hair because of weakness of her arm.

There was clearly no remission of the patient's symptoms of myasthenia gravis during pregnancy; there is some evidence, not entirely satisfactory, that she was worse during the last four or five months.

After delivery the patient was somewhat better for three or four months; prostigmine was not required. She did not nurse her child. A relapse occurred in May 1938 and from that date to 1942 the patient has required 6 to 9 tablets of prostigmine bromide a day as a maintenance dose. Except that she is usually worse during her menstrual periods, her course is steady, without remission or relapse.

CASE 4.—Mrs. Felixine H., a housewife, of Canadian parentage, was first seen in June 1939 at the age of 28.

She was born in June 1910, one of eight children, all living and well in 1942. Except for childhood diseases the patient was not sick until the present illness. She was married at

18 and her first, second and third pregnancies were normal. About one and one-half years after the birth of her third child she had her first symptoms of myasthenia gravis, in the summer of 1936. Ptosis and diplopia were soon followed by general weakness and dysphagia. She lost 30 pounds (13.6 Kg.).

Her condition was stationary when she began her fourth pregnancy in August 1937. She had an abortion performed in the third month (Worcester) because of her symptoms, which became more severe. While still in the hospital, a prostigmine test was found positive; on 3 or 4 tablets of prostigmine bromide a day she showed immediate improvement.

Since 1937 she has taken 3 to 10 tablets a day as a maintenance dose; on this intake she has remained in fairly good health.

Case 5.—Mrs. Anna C., a housewife, of Italian parentage, was first seen in January 1940 at the age of 22.

She was born in September 1917 and had been well, except for childhood diseases, until the present illness. She was married early in 1937; her first pregnancy was normal. Her first symptoms of myasthenia gravis, nasal speech and dysphagia, occurred about six months after her delivery, in the summer of 1938.

In December 1938 her second pregnancy began while she was having fairly severe symptoms. She immediately felt better, even before she was certain of the pregnancy, and she went to work in a shoeshop, in a position she had occupied prior to her marriage. In two or three months all her symptoms were gone and she remained in complete remission for the last two trimesters of pregnancy. Her second pregnancy terminated in August 1939 with normal delivery in four hours.

Symptoms of myasthenia gravis returned five days after delivery. With one mild relapse, the patient has been maintained on 6 to 8 tablets of prostigmine bromide since her pregnancy up to 1942.

Case 6.—Mrs. Claire A. D., a shoe factory worker, of French-Canadian parentage, was first seen in May 1932 at the age of 24.

Born in 1908, she was married in 1926 at the age of 18. Three years later her first pregnancy resulted in a miscarriage at five to six months. In 1930 she had her first symptoms of myasthenia gravis—general weakness and a short attack of ptosis and diplopia. Her second pregnancy, in 1931, also resulted in a miscarriage at two months; nothing is known of its effect on her symptoms of myasthenia gravis. From 1933 to 1934 her symptoms were somewhat controlled by ephedrine, but she had difficulty in chewing, as well as diplopia, dysarthria and some general weakness.

Soon after the onset of her third pregnancy, in 1934, she began to feel better, and within a month or two she could run up and down stairs and felt entirely normal. The exact date of the beginning of the remission is not clear, but it came suddenly and was remarkably complete. At the end of six months a therapeutic abortion was performed (Manchester, N. H.), for the patient "feared that the disease might be transmitted to her offspring." Within a few weeks her condition relapsed rapidly to that prior to her pregnancy.

From 1935 to 1939 her condition remained unchanged, somewhat relieved by the taking of ephedrine. In December 1939 she suffered a more severe relapse and returned to the Massachusetts General Hospital after an absence of eight years. From 1940 to 1942, she was fairly well adjusted on 4 to 8 tablets of prostigmine bromide daily.

Case 7.—Mrs. Anna L. L., a nurse, of Jewish parentage, was first seen in November 1940 at the age of 32.

There was no relevant history of disease up to the time of her first symptoms of myasthenia gravis in 1937. The disease began with weakness of the jaw and inability to chew. Progression occurred so that her jaw had to be held up with her hand. The neck muscles were soon involved, so that the head fell forward. Subsequently the patient had weakness of the arms. In a few months a remission occurred, lasting for over a year. A relapse came on in 1939 and in October she had general weakness, diplopia, dysphagia and regurgitation. She lost 17 pounds (7.7 Kg.) in about four weeks. The prostigmine test was positive in October 1939 and she responded to prostigmine bromide by mouth in a satisfactory manner, her intake ranging from 8 to 20 tablets, with an average of 10 a day.

Her first pregnancy began in October 1940. Within six weeks she reduced her prostigmine intake from 8 to 3 tablets a day and during the rest of the pregnancy required only 10 in all. Her symptoms of myasthenia gravis entirely disappeared and she felt not only "well" but "better" than her normal state of health. Delivery occurred in July 1941 by low forceps with traction (Massachusetts General Hospital). She nursed her normal child until an abscess of the breast necessitated weaning. Her symptoms of myasthenia gravis returned slightly while she had the abscess and she took 3 to 6 tablets a day. Up to 1942, six months after delivery, she was nearly well, being maintained on 2 to 4 tablets daily.

Case 8.—Mrs. Helen D., a housewife, of Irish-American parentage, was first seen in December 1941 at the age of 42.

She was born in September 1899 and had no disease except those of childhood up to the time of her present illness. She was married in May 1925 at the age of 25. Seven children, including twins, were born prior to January 1937. In June 1937 ptosis, her first symptom of myasthenia gravis, developed. Subsequently she showed weakness of her arms and legs, diplopia, dysphagia and dysarthria. She found it difficult to lift her arms and comb her hair. These symptoms were present continuously from about June 1937 to October 1939, a period of more than two years. During this time various treatments, except prostigmine, were tried. These were ineffective, and her condition steadily became worse.

In October 1939 she began her seventh pregnancy and in the fourth month felt better. Shortly her symptoms of myasthenia gravis all disappeared, and during the remainder of the pregnancy she considered herself entirely well. A 6 pound (2,722 Gm.) baby was born normally on July 7, 1940 (Winchester Hospital). She contracted whooping cough shortly after the baby was born and finally, by November 1940, her previous symptoms of myasthenia gravis returned. During 1941 her symptoms were severe; treatment with prostigmine bromide was begun after a prostigmine test in December 1941.

COMMENT

The course of myasthenia gravis is profoundly affected in most cases by the advent of pregnancy. In patients in whom an even maintenance of symptoms existed for many months before pregnancy on a nearly fixed intake of prostigmine bromide and an equally even course was reestablished after pregnancy, the effect is clearly shown (chart 1). It is well known that progress in myasthenia gravis is by remissions and relapses and that such changes might occur coincidentally with pregnancy must be considered. In view of our experience in the series of 8 cases here reported, however, such a coincidence cannot be held. The prompt change in the symptoms, either a remission or a relapse, occurring in some cases within a few weeks of conception, is also a strong argument against coincidental variations. All our patients have shown some change during pregnancy; most have had remissions even more complete than ever experienced in the natural course of the disease.

Certain features of the effect of pregnancy on the course of myasthenia gravis are worthy of more detailed evaluation. Since prostigmine has so profoundly affected the course of the disease itself, our report must be based largely on experience since 1935. The post-prostigmine group cannot readily be compared, moreover, with the preprostigmine group.

REMISSIONS AND RELAPSES

Patients may have both a relapse and a remission in the same pregnancy, the relapse often coming in the first trimester with the remission following. Patient 1 (chart 1) experienced a mild remission during the second month of pregnancy, then suffered a relapse in the third and fourth months. Rapidly in the fifth month a definite remission took place; in the sixth, seventh and eighth months she was better than she had even been at any time during her disease. A slight relapse in the ninth month was followed by a good but not complete remission lasting four and one-half months after delivery. A similar course was followed in case 2 (chart 2); mild remission in the second month, a relapse in the third month, complete remission in the fourth to ninth months, with a mild relapse at delivery followed by a remission in the postpartum period lasting five months. The course run by these 2 patients is fairly typical of the group as a whole. There is usually a complete remission of symptoms in the last two trimesters of pregnancy, but the onset may vary in the first trimester or even not occur until the fourth or fifth month (table 1). The onset in 3 cases was in the second month, in 2 in the third month and in the fourth and fifth months in 2 others. In at least 1 case a remission took place before pregnancy was suspected (case 5). Patients long accustomed to taking a maintenance dose of prostigmine bromide by mouth will begin to reduce the daily intake before they realize that a remission is taking place, as in case 1 (chart 1), during the third to fifth months of her pregnancy. The remission may occur abruptly and become complete in about four weeks (case 1). When a remission takes place all symptoms disappear, and many patients report that they feel "better than normal" and "completely well," a condition not attained at any time in the course of their disease except during pregnancy. The remission is like the sense of complete well-being experienced after an injection of prostigmine methylsulfate, as used in the "prostigmine test," [29] only prolonged over days and months instead of lasting a few minutes.

TABLE 1.—*The Time of Onset and Completeness of Remission in Eight Cases of Myasthenia Gravis During Pregnancy*

Case	Pregnancy	Onset	Character
1	Second	Third month	Complete (above "normal")
	Third (chart 1)	Fifth month	Complete (above "normal")
2	Second (chart 2)	Third month	Complete
3	Fourth	No remission recorded; "relapse" in last trimester	
4	Fourth	Abortion in third month, in relapse	
5	Second	Second month	Complete
6	Third	Second month	Complete (above "normal"); abortion at six months
7	First	Second month	Complete (above "normal")
8	Seventh	Fourth month	Complete ("entirely well")

In 4 of the 8 cases observed no relapses occurred during pregnancy (table 2). One of the 4 patients had an abortion induced at six months; the other 3 went on to delivery at nine months. Patient 1 had a moderate relapse during the third to the fifth month of her third pregnancy and another mild relapse in the ninth month. Patient 2 suffered a moderate relapse in the third month and patient 4 in the first three months, followed by abortion at the end of this period. Patient 3, with the poorest history, did not have a remission at any time during pregnancy and probably suffered a relapse toward the end of the nine months. She was delivered, however, without the benefits of prostigmine, and her history is not sufficiently accurate to be dependable. In general, the relapses during pregnancy are mild to moderate and usually do not cause undue anxiety when the patient is under complete control with prostigmine. In some cases abortion has been carried out during a period of relapse, a therapeutic measure discussed here.

29. Schwab, R. S., and Viets H. R.: The Prostigmine Test in Myasthenia Gravis: Third Report, New England J. Med. **219**: 226-228 (Aug. 18) 1938.

ABORTION

In 2 of our cases abortions were induced for therapeutic reasons, 1 in the third month (case 4) and the other after six months (case 6). Neither was directly under our care at the time. Case 4, in which an abortion was induced in the third month because of increased symptoms, illustrates the usual time for pregnancy to be interrupted. Most abortions reported in the literature have been carried out at this time. This therapeutic procedure was seriously considered in case 1 of our series during the eighth and ninth weeks of her pregnancy when her relapse was at its height (chart 1). A week later, however, remission set in rapidly. Under adequate prostigmine therapy it was possible to carry her through her period of relapse, a procedure often not possible before the advent of prostigmine treatment. This was also true in the case reported by Tabachnick,[26] for he carried his patient through to term, under prostigmine, in spite of the fact that no remission occurred. In this respect his report is similar to our case 3.

Before the use of prostigmine, abortion was frequently carried out, usually at the end of the first trimester or in the early part of the second trimester of pregnancy. This is well recognized now as the most dangerous time in the whole nine months. In the case reported by Burr and McCarthy [4] death occurred in the third or fourth month of the second pregnancy; Kohn's [7] patient had an abortion induced at four months; Indemans' [11] at twenty weeks; Laurent's [16] at six months, and 4 other pregnancies terminated in miscarriage before six months; Wolff's [17] patient had an abortion induced at four months and Mortara's [20] at two months. It seems likely, in view of our more recent experience with patients under prostigmine therapy, that many, if not all, of these abortions would not now be indicated. Abortion, moreover, may not relieve the patient of her symptoms or even prevent a fatal termination from the disease. Kohn's [7] patient died a week after abortion.

TABLE 2.—*Relapses in Eight Cases of Myasthenia Gravis During Pregnancy*

Case	Pregnancy	Onset and Duration	Character
1	Second	First month only	Moderate to severe
	Third (chart 1)	Third to fifth month	Moderate
		Ninth month	Mild
2	Second (chart 2)	Third month only	Moderate
3	Fourth	"Entire nine months"	Moderate to severe
4	Fourth	"First to third months"	Abortion in third month
5	Second	None	
6	Third	None	Abortion at six months
7	First	None	
8	Seventh	None	

At the present time abortion for therapeutic reasons is rarely, if ever, needed, provided adequately controlled prostigmine therapy is instituted. In our series probably neither abortion was justified. There is no reason

to believe that patient 4 could not have been carried through to term. Patient 6 had her abortion induced on the untenable hypothesis that the disease might be transmitted to the child. There is no evidence, either in the literature or in our experience, to lead one to believe that such is ever the case.

DELIVERY

In our series of 8 patients, delivery has been supervised in 2 instances. Patient 1 was delivered at the Boston Lying-In Hospital after being under observation for more than five years. A previous pregnancy, her second, was not allowed to go to term, as it was "thought the uterus would fatigue," and the patient was delivered by cesarean section of a 4¼ pound (1,928 Gm.) child. Toward the end of her third pregnancy (chart 1) she was in a state of partial remission, taking 45 mg. of prostigmine bromide by mouth a day. The patient was delivered by cesarean section, under spinal anesthesia, of a normal child weighting 4 pounds 13½ ounces (2,197 Gm.). The patient exhibited no abnormal symptoms and continued her intake of prostigmine at the same level as before delivery for about four weeks post partum, at which time she had a complete remission lasting a number of months. Because of oligogalactia, the child was given a formula and made a normal gain in weight. At the time of the section the patient was sterilized at her own request. No untoward symptoms at any time disturbed the course of her labor.

Patient 7, who was in complete remission at term, was also delivered without complications. Her labor of eight hours was uneventful; delivery was aided by the use of low forceps and traction. The normal child was nursed for a number of weeks until an abscess of the breast developed. In this instance also myasthenia gravis did not interfere with normal labor and added treatment was not needed. Both patients were closely observed for signs of returning myasthenia and both prostigmine bromide and prostigmine methylsulfate were ready for instant use if needed. There was no indication that either the skeletal muscles or the uterus needed additional support.

In a number of instances, moreover, an accurate history of delivery outside the hospital was obtained. The delivery by cesarean section of the second pregnancy of patient 1 has already been noted. In the second pregnancy of patient 2 normal labor took place at term during a full remission. Patient 3 never had a remission during pregnancy, but in spite of this delivery was accomplished without difficulty, although the labor lasted sixteen hours. In case 5, labor lasted only four hours; delivery was normal at term, the patient being in complete remission. Normal delivery was also reported at term in the seventh pregnancy of patient 8, this patient also being in complete remission. In our series, therefore, labor was normal in each instance and was not affected by the myasthenia gravis even if the patient was not in remission at the time. All patients who were suffering a relapse, however, were under prostigmine control, with the possible exception of patient 3.

Before prostigmine was available, labor was thought to be a serious complication of the disease, and for this reason, at least in part, abortion was frequently carried out. Because of the strain attending labor, von Hösslin [8] advised against pregnancy in patients with myasthenia gravis. Gemmell [10] delivered his patient by cesarean section rather than have her face labor in her exhausted state. In many instances in the literature, however, labor was normal and without serious effect on the disease, especially if the patient was in a state of remission at term.

In general, either with or without prostigmine, labor itself is not usually affected by the presence of myasthenia gravis. A patient with severe involvement in a state of relapse may have a prolonged and somewhat difficult labor, but this is not the usual experience if the prostigmine intake is well adjusted. The fear of complications during labor should not, in our opinion, justify abortion at an earlier stage of pregnancy.

POSTPARTUM PERIOD

Remissions lasting three to five months are the usual course in cases in which there is a remission during pregnancy (charts 1 and 2). The remission in case 1 lasted three months after delivery in both the second and third pregnancy. In case 2 there was a prolonged postpartem remission lasting nine months. Symptoms of myasthenia gravis, however, may return in a few days, as in case 5. In case 7, on the other hand, there were only slight symptoms six months after delivery, but a return in three or four months is about the average, as in case 8. In no case in our series did the myasthenia gravis show itself after delivery in an abrupt or in an alarming manner.

Reuter [19] found his patient's condition worse after delivery and the patient died. One of our patients died (patient 2) but so long after delivery (seventeen months) that the relationship between her pregnancy and her death could not be evaluated.

The evidence for pregnancy making the disease more severe or even being a secondary cause of death is slight. In most instances the disease is not made worse by either pregnancy or labor. Our experience, moreover, does not bear out von Hösslin's statement that nursing has an unfavorable effect on the patient, although most of our patients, for one reason or another, did not nurse their children. In addition, it may be noted, contrary to von Hösslin, that second pregnancies in patients with myasthenia gravis do not result in untoward symptoms or difficult delivery (case 1). Our experience also does not allow us to agree with Novak,[30] who recommends abortion if the disease starts during pregnancy or becomes worse.

CONCLUSIONS

The effect of pregnancy on myasthenia gravis is usually favorable. Most patients experience a definite remission in symptoms; relapses, if they occur, are mild. Patients on a maintenance dose of prostigmine before pregnancy may experience a complete remission during the second and third trimesters, and the remission may last three to six months after delivery. Relapses usually occur in the first trimester, when the patient may be at her lowest point. Therapeutic abortion has not been found necessary, nor is it advised, provided the patient can be maintained under prostigmine control. A second pregnancy does not carry more hazard than the first in patients with myasthenia gravis. Pregnancy, labor or nursing does not affect the course of the disease unfavorably under present conditions of treatment.

66 Commonwealth Avenue.

30. Novak, J.: Beziehungen zwischen Nervensystem und Genitale, in Halban and Szitz: Biologie und Pathologie des Weibes, Berlin, Urban & Schwarzenberg, 1928, vol. 5, pt. 4, p. 1427.

OTOSCLEROSIS

RESULTS WITH THE FENESTRATION OPERATION AFTER THREE AND ONE-HALF YEARS

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That the hearing may be partially restored, perhaps permanently, in cases of otosclerosis by means of a one stage surgical procedure was first reported by Lempert [1] in 1938 and has since been confirmed by Campbell,[2] by Ersner and Myers [3] and by my own experience.[4] I first used the fenestration operation on July 15, 1938 and have performed it on a total of 117 patients with otosclerosis between that date and Dec. 11, 1941. Sufficient time has now elapsed since this new operation was first used to warrant an analysis of the results and an evaluation of its usefulness in impaired hearing due to otosclerosis.

OTOSCLEROSIS: PATHOLOGY, INCIDENCE, DIAGNOSIS

Otosclerosis is a unique disease of bone found only in man and is confined exclusively to the bony capsule surrounding the inner ear. The pathologic lesion of otosclerosis consists of a rather sharply localized focus

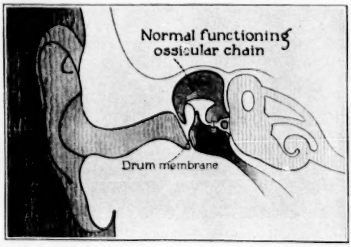

Fig. 1.—Diagram representing the normally functioning ossicular chain transmitting sound vibrations from the drum membrane to the labyrinth.

of vascular, spongy, newly formed bone that appears in the dense, ivory-like labyrinthine capsule. Routine examination of the temporal bones at autopsy reveals an otosclerotic focus in about 1 out of every 20 to 25 adults.[5] This focus occurs most often just anterior to the oval window. As it slowly enlarges it tends to grow across the annular ligament onto the foot plate of the stapes in the oval window, until finally the stapes becomes firmly ankylosed to the margins of the window and the window is virtually obliterated.

The loss of hearing by patients with otosclerosis is due to the stapes ankylosis which prevents air borne sounds from being carried by the drum membrane and ossicular chain to the inner ear. With the oval window obliterated, only sounds loud enough to cause the skull to vibrate can be carried directly through the bone to the inner ear and be heard. Secondary degeneration of the nerve of hearing is a late development in cases of otosclerosis and rarely may lead to complete loss of all hearing. In three fourths of the cases in which microscopic otosclerosis was found at autopsy the focus had not yet invaded the oval window and stapes foot plate and the hearing was not impaired.

The diagnosis of otosclerosis with stapes ankylosis is made on the history of the insidious onset of a slowly progressive hearing loss, beginning in early or middle

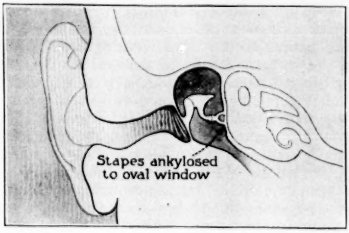

Fig. 2.—Diagram showing the ossicular chain fixed by stapes ankylosis as the result of otosclerosis.

adult life without involvement of otitis media, with intact drum membranes and normally patent eustachian tubes and a conduction type of hearing impairment with prolonged hearing by bone conduction and decreased hearing by air conduction. Otosclerosis is one of the most important causes for chronic progressive hearing impairment in early and middle adult life. In a study of the causes of hearing impairment among the members of the Washington, D. C., League for the Hard of Hearing made in 1933,[6] I found that 70 per cent had lost their hearing as a result of stapes ankylosis. Subsequently one of these persons died and microscopic study of the temporal bones confirmed the diagnosis of otosclerosis made in the original survey. The clinical diagnosis of stapes ankylosis due to otosclerosis can be made with accuracy in the majority of cases.

The cause of otosclerosis is not known. There is a strong hereditary tendency, about two thirds of the patients with stapes ankylosis having some relative

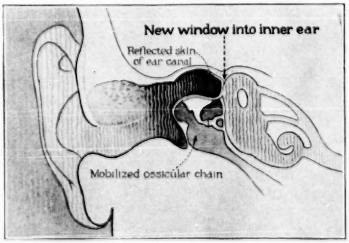

Fig. 3.—Diagram showing the transmission of sound vibrations from the drum membrane to the labyrinth restored by the fenestration operation.

with progressive deafness. Since for every clinical case of stapes ankylosis and loss of hearing there are 3 in which an otosclerotic focus produces no symptoms, it is extremely difficult to determine the exact role of heredity in this disease.

There is no effective medical treatment for otosclerosis, either to arrest or to prevent the progressive

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1. Lempert, Julius: Improvement of Hearing in Cases of Otosclerosis: New One Stage Surgical Technic, Arch. Otol. **28:** 42-97 (July) 1938.
2. Campbell, E. H.: Fistulization of Labyrinth in Chronic Progressive Deafness: Report of Cases, Arch. Otol. **30:** 689-710 (Nov.) 1939; footnote 11.
3. Ersner, M. S., and Myers, David: Surgical Treatment of Deafness: Report of Experiences with Endaural Labyrinthine Fenestration, Ann. Otol., Rhin. & Laryng. **50:** 206-234 (March) 1941.
4. Shambaugh, G. E., Jr.: Operative Treatment of Otosclerosis: Reply to a Recent Criticism, Arch. Otol. **32:** 927-933 (Nov.) 1940; footnote 7.
5. Crowe, S. J.: Yearbook of Eye, Ear, Nose and Throat, 1940, Chicago, Yearbook Publishers.
6. Shambaugh, G. E.; Wallner, L. J.; Greene, Lois D., and Shambaugh, G. E., Jr.: Severe Deafness in Adults, Arch. Otol. **18:** 430 (Oct.) 1933.

hearing loss or to restore the hearing. The most one can do medically is to make the diagnosis, advise against unnecessary or useless treatment, pay attention to the general health and enjoin the learning of lip reading or the use of an electrical hearing aid.

HISTORY OF THE FENESTRATION OPERATION

The surgical treatment of otosclerosis has been a long, slow development beginning more than fifty years ago, soon after the disease was first described, with attempts to loosen or remove the ankylosed stapes. Owing to the difficulty of extracting the ankylosed foot plate and to bony closure of the oval window when it was extracted, these operations were finally abandoned around 1900 in favor of attempts to make a new window into the labyrinth to take the place of the occluded oval window. A considerable hearing improvement was repeatedly observed when such a new window was made, but within a few weeks or months the hearing improvement would be lost, as the window would close by bone regeneration. The problem of making a window that would stay open was pursued, especially by Holmgren in Sweden, who tried many different technics but without success. It was not until 1924 that Sourdille in France, inspired by Holmgren's work, devised a technic with which he obtained a permanently open window with a lasting hearing improvement in some cases. Sourdille's "tympanolabyrinthopexy" was accomplished in three or four stages separated by several months, so that a year or more was required to obtain the hearing improvement. This made the Sourdille operation impractical for the average patient.

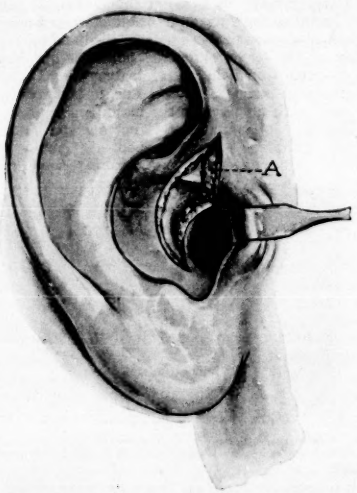

Fig. 4.—Endaural skin incision for the fenestration operation.

In 1938 Lempert [5] in this country described a practical one stage operation which produced an end result similar to Sourdille's. The operation consists essentially in exposing the bony labyrinth by partial removal of the mastoid cells, in making a new window into the horizontal semicircular canal with a dental finishing burr and in covering this window with a flap taken from the skin of the external auditory meatus and continuous with the drum membrane, so that the vibrations of the drum membrane are carried directly to the window and transmitted to the perilymph (figs. 1, 2 and 3).

Fig. 5.—Operating setup used in making the fenestra, showing the binocular dissecting microscope on one side and the dental engine on the other, shielded from the field by sterile sleeves. The glass irrigating container for the saline solution with the tubing for the saline solution and suction may be seen.

In 1940 I introduced the use of constant irrigation to wash away every particle of bone dust while making the window in the bony horizontal semicircular canal, in order to prevent bone dust from falling into the window and leading to the formation of new bone.[7] I also introduced the use of the binocular dissecting microscope to aid in the visualization of the very tiny structures while making the window. Table 2 shows the improved results obtained when these modifications were added to the technic. In 1941 Lempert [8] described a modification of his original technic in which he makes the new window farther forward where the ampulla of the horizontal semicircular canal opens into the vestibule, permitting a larger window to be made closer to the occluded oval window.

TECHNIC OF THE FENESTRATION OPERATION

The fenestration technic that I now follow is essentially that described by Lempert,[9] modified by the use of constant irrigation and the microscope while making the window, and is briefly as follows:

Under avertin with amylene hydrate anesthesia the endaural incision is made to expose the cortex of the

7. Shambaugh, G. E., Jr.: Surgical Treatment of Otosclerosis, Wisconsin M. J. **40**: 488-492 (June) 1941.
8. Lempert, Julius: Fenestra Nov-Ovalis: A New Oval Window for the Improvement of Hearing in Cases of Otosclerosis, Arch. Otol. **34**: 880-912 (Nov.) 1941.
9. Lempert (footnotes 1 and 8).

mastoid process (fig. 4). Enough of the cortex and mastoid air cells are removed to expose the bony horizontal semicircular canal, the incus and the head of the malleus. The superior and posterior bony meatal wall is removed, leaving the very thin skin lining the meatus intact with its attachment to the drum membrane. Appropriate incisions through this skin free it in the form of a flap, connected with the drum membrane, with which to cover the new window.

The incus is removed and the head of the malleus is amputated to expose the bulge of the ampulla of the horizontal canal. With the dental finishing burr, working through the microscope and with a film of warm sterile saline solution flowing across the bony horizontal canal (fig. 5), the bony covering of the ampulla is slowly removed until only the filmy endosteum remains with pulverized particles of bone adherent to it. With special tiny curved probes and hooks the endosteum is teased away, leaving the perilymph space widely exposed, with the delicate transparent membranous labyrinth floating in it (fig. 6). The completed window lies directly above the oval window, separated from it by only the facial nerve in its bony canal, and is slightly larger than the oval window. The previously prepared skin flap placed over the new window and held firmly in place with paraffin mesh gauze packs completes the operation.

The hearing, which is noticeably improved immediately after the operation, usually declines during the first week and then gradually improves to reach its maximum from two to six months later. Complete healing by epidermization of the operative cavity occurs in from eight to ten weeks in the average case. Tinnitus is frequently but not invariably relieved in the operated ear when the hearing is restored.

INDICATIONS

The fenestration operation is indicated in cases of stapes ankylosis with sufficient hearing impairment to constitute a handicap and with an intact nerve of hearing for the conversational frequencies. The bone conduction hearing tests are a reliable measure of the integrity of the nerve of hearing. The patient should be in good health, the drum membrane must be intact and the ear must be free from active or recent inflammation. My oldest patient was 62, my youngest 18. The poorer hearing ear should be selected for operation so that the patient will run no risk of losing what useful hearing he has should the operation be unsuccessful.

EVALUATION OF RESULTS

The evaluation of any treatment for the improvement of hearing must be based on audiometrically measured results. Because deafened persons are suggestible, any treatment that stimulates their hope will cause them to pay better attention, and they will seem to hear better: one cannot accept a patient's statement of improvement that is not verified by audiometric tests.[10] To be greater than the normal range of variability a hearing gain must exceed 10 decibels for the conversational tones (512, 1,024, 2,048 vibrations a second).

Not all the published reports of results are sufficiently complete to permit an accurate evaluation. Campbell[11] in a complete report recorded the hearing gain or loss for the conversational frequencies in 20 consecutive cases in which the operation was performed a year or more before. There was a hearing gain of greater than 10 decibels for these frequencies in 7, a further loss of more than 10 decibels in 6 and no essential change in 7. Ersner and Myers[3] reported 4 good results out of 38 cases in which the operation was done but did not give the decibel gain or loss for conversation in each case. Lempert[12] in 1940, in his most complete report of results, reported a restoration of "practical physiological hearing" in 69, or 58 per cent, of 120 consecutive cases, but he does not define clearly what he means by "practical physiological hearing"; he does not give the decibel gain in these cases nor does he give the decibel loss in the unsuccessful cases.

One of the principal criticisms of the Lempert fenestration operation when it was first described was that the hearing improvements reported were of too brief duration to be regarded as permanent and that in all

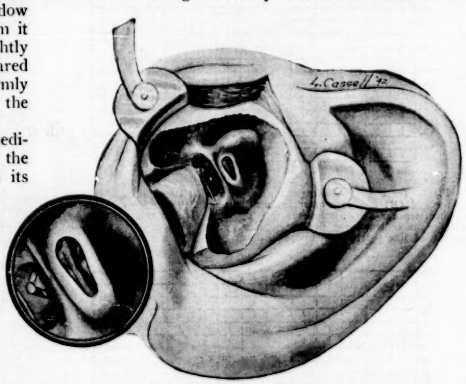

Fig. 6.—The completed fenestra in the ampulla of the bony horizontal semicircular canal as viewed through the binocular loop with a magnification of 2 diameters. Inset shows the fenestra as it appears through the binocular dissecting microscope with a magnification of 7 diameters. Note the membranous labyrinth running forward and dipping down to expand into the ampulla of the membranous canal, which nearly fills the bony ampulla. Immediately below the ampulla may be seen the ankylosed stapes.

probability all or most of the new windows would eventually close.[13] This prediction proved to be partially correct in that many of the early cases originally reported by Lempert as showing a "permanent" hearing improvement[1] subsequently lost their improvement owing to closure of the window.[8] However, some of the early windows have now remained open for periods up to four years,[8] with a maintained hearing improvement, and in these cases it seems likely that the window and the hearing gain will remain indefinitely.

In evaluating the fenestration operation one's first task is to determine the permanency of the hearing improvements obtained. An analysis of results in 128 consecutive ears of 117 patients operated on by me between July 1938 and December 1941 shows that partial or complete closure of the new window with loss of the hearing improvement has thus far occurred in 31. In all these cases repeated audiograms taken

10. Fowler, E. P., Jr.: Critique of Surgical Treatments for Deafness, Canad. M. A. J. **43**: 546-552 (Dec.) 1940.

11. Campbell, E. H.: Further Experiences in Fenestration of the Labyrinth in Chronic Progressive Deafness, Ann. Otol., Rhin. & Laryng. **50**: 182-205 (March) 1941.

12. Lempert, Julius: Endaural Fenestration of External Semicircular Canal for Restoration of Hearing in Cases of Otosclerosis: Summary Report of 120 Cases, Arch. Otol. **31**: 711-779 (May) 1940.

13. Crowe, S. J.: Yearbook of Eye, Ear, Nose and Throat, 1938, Chicago, Yearbook Publishers.

every few weeks permit determination of the date of the beginning drop in hearing indicating closure of the window. Table 1 summarizes these data and shows that in the majority of cases (77 per cent) closure

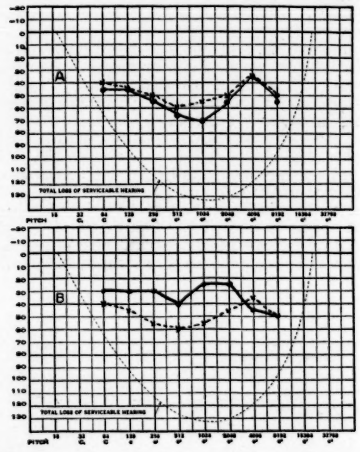

Fig. 7 (case 52).—Audiogram of Miss H. F., aged 21, (*A*) one day before and (*B*) one year after fenestration. She regained her position as a school teacher after the operation. The solid line in this and the other audiograms indicates the hearing loss in decibels in the operated ear and the dotted line that in the unoperated ear.

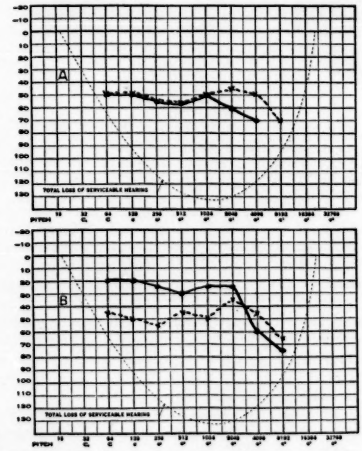

Fig. 8 (case 53).—Audiogram of Miss H. W., aged 27, (*A*) two days before and (*B*) ten months after fenestration. She regained her position as a school teacher after the operation.

began within the first four postoperative months and that after the sixth postoperative month beginning closure as evidenced by a drop in hearing rarely occurred. From these data one may conclude that a hearing gain maintained for more than six months after the fenestration operation is probably permanent.

My results with the original Lempert technic are compared in table 2 with my results when constant irrigation and when irrigation and the microscope were added to the original technic. With these modifications a probably permanent hearing improvement is obtained in better than 88 per cent of operations.

TABLE 1.—*Time After Operation of Beginning Closure in Thirty-One Ears in Which the Fenestra Closed with Loss of the Hearing Gain*

1st Month	2d Month	3d Month	4th Month	5th Month	6th Month	7th Month	8th Month
1	10	7	6	3	2	1	1

Should the new window close partially or completely with loss of the hearing improvement, it may be reopened by a second operation in which the skin covering the bony horizontal canal is elevated, the newly

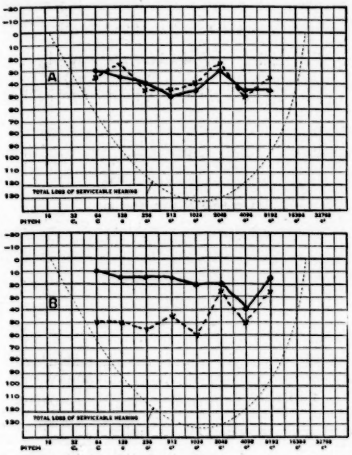

Fig. 9 (case 38).—Audiogram of Mr. F. A., aged 28, (*A*) one day before and (*B*) one year after fenestration. He was passed by his Selective Service draft board as having "normal" hearing after the operation.

formed bony lid is removed and the skin flap is replaced. Revision of the original window was carried out on 17 ears, twice on 2 ears. A hearing improvement is now present in 16 of these 17 reoperated ears.

TABLE 2.—*Comparison of Hearing Results Six Months After Fenestration with Different Technics*

	Original Lempert Technic (14 Ears)	Constant Irrigation Added (29 Ears)	Irrigation and Microscope Added (34 Ears)
Hearing improved (more than 10 db gain for speech).....	4 (28.6%)	22 (75.8%)	30 (88.2%)
Hearing worse (more than 10 db loss for speech).....	2 (14.3%)	0 (0%)	1 (3%)
Hearing unchanged (within 10 db of preoperative level)....	8 (57.1%)	7 (24.3%)	3 (8.8%)

Analysis of the present status of the hearing results in the 117 patients with otosclerosis operated on over the three and one-half year period (table 3) shows that 88.9 per cent now have a hearing improvement greater than 10 decibels for the conversational

frequencies, 1.7 per cent have a further loss of more than 10 decibels, while in 9.4 per cent the hearing is essentially unchanged. The average gain in the 88.9 per cent with a good hearing result is 26.5 decibels for the conversational frequencies. If one analyzes the hearing results in the 73 patients whose hearing has been tested six months or more after operation, an improvement, probably permanent, is found in 64, or 87.7 per cent; a further loss in 2, or 2.7 per cent, and no change in 7, or 9.6 per cent. The average decibel gain in the 65 patients with a probably permanent improvement is 25.7 decibels for conversational tones.

The practical hearing result for the patient after the fenestration operation will vary with the decibel gain for speech and with the amount of the preoperative hearing loss. Many of the patients had used an electrical hearing aid for periods of time up to twenty years before operation. With 2 exceptions all patients who received a lasting hearing improvement state that they

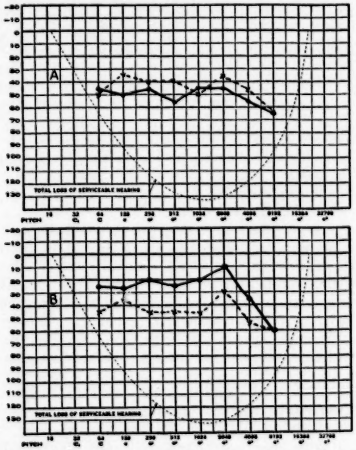

Fig. 10 (case 59).—Audiogram of Mr. R. S., aged 26, (*A*) three days before and (*B*) ten months after fenestration. He was passed by his Selective Service draft board as having "normal" hearing after the operation.

now hear better without their aid than they could wearing the aid before the operation and that their present hearing is "natural" and free from the distortion and static of the hearing aid (figs. 11 and 12). One of the 2 exceptions was a patient who before the operation

TABLE 3.—*Present Status of the Hearing in 117 Consecutive Patients with Otosclerosis Who Have Had 128 Ears Fenestrated with 19 Revisions*

	Patients	Percentage
Hearing improved	104	88.9
Hearing worse in operated ear	2	1.7
Hearing unchanged	11	9.4
Average gain for speech frequencies (512, 1,024, 2,048) in the 104 patients with an improvement	26.5 decibels	

had an average loss of 70 decibels for the speech frequencies in the operated ear and a loss of 46 decibels in the unoperated ear. The operated ear gained 20 decibels but is still slightly below the unoperated ear, and the patient still requires a hearing aid. The second exception was a patient who before operation was nearly "stone deaf" with a loss of 93 decibels for speech in the operated ear and 85 decibels in the unoperated ear. She gained 28 decibels for speech in the operated ear, bringing it up to a 65 decibel loss. She states that her

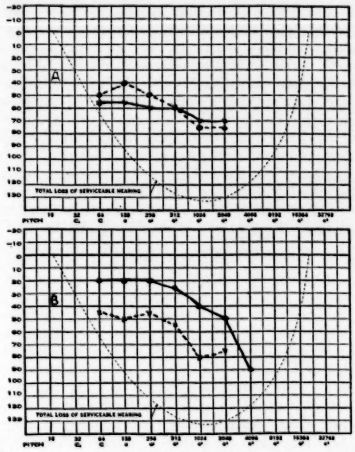

Fig. 11 (case 22).—Audiogram of Mr. S. E. D., aged 62, (*A*) two days before and (*B*) one year and five months after fenestration. He hears better after fenestration than he did for ten years with a hearing aid.

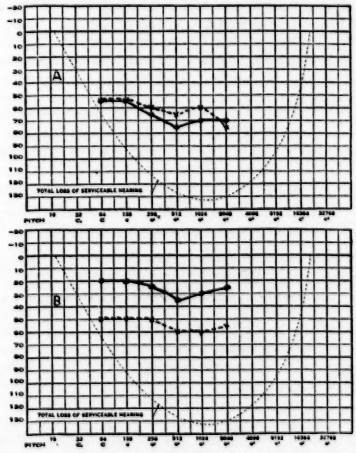

Fig. 12 (case 48).—Audiogram of Sister H. A., aged 52, (*A*) seven days before and (*B*) one year after fenestration. She hears better after fenestration than she did for twenty years with a hearing aid.

hearing now is about equal to but does not surpass her preoperative hearing when she wore her aid. She no longer uses her aid and is still quite hard of hearing, though she can now hear loud conversation close at hand whereas previously she could scarcely hear the loudest shout into the ear.

Definite economic rehabilitation has occurred in many of the operated patients. For example, patients 52

(fig. 7), 53 (fig. 8) and 85 were school teachers who had been forced to give up their profession on account of their hearing impairment. They have all regained their positions and are now teaching school.

When the postoperative hearing level is raised to within 20 decibels of normal for the speech frequencies the patient will have sufficient hearing to be regarded as normal under practically all circumstances. For example, patients 38 (fig. 9) and 59 (fig. 10) were passed by their Selective Service draft board as having "normal" hearing six months after the fenestration.

When the postoperative hearing level is raised to within 30 decibels of normal the patient will be able to get along without difficulty in the majority of social and economic contacts. Of the 117 patients operated on the hearing loss has been restored to within 20 decibels of normal for the speech frequencies in 11 and to within 30 decibels of normal for speech in 52.

COMPLICATIONS

Including the 19 patients who had revisions and the 11 who had both ears operated on, a total of 147 consecutive operations were done on the 117 patients, with no fatalities and no serious complications. Minor complications in this series have consisted of transient facial paralysis in 4 cases beginning seven to ten days after the operation, with complete recovery in each case within one to two weeks; postoperative pulmonary atelectasis in 1 case which cleared promptly on change of position (seating the patient in a chair), hyperventilation with carbon dioxide and forced coughing.

Postoperative sterile labyrinthitis of varying degree is the rule after fenestration and is evidenced by dizziness, nystagmus, ataxia and depression in hearing lasting a few days to a week. In 2 of the 117 cases the hearing depression was permanent, amounting to a further loss of 18 decibels for the speech frequencies in 1 case and 13 decibels in the other. Since in each case the poorer hearing ear had been selected for operation, this further loss was not of serious consequence to the patient's useful hearing. In 2 other patients the dizziness has lasted in a mild form for more than a year, consisting of a sense of unbalance on sudden movements. As a rule the dizziness and ataxia disappear completely within the first three or four weeks after operation.

SUMMARY AND CONCLUSIONS

1. The fenestration operation offers the possibility of the partial restoration of impaired hearing, the result of stapes fixation.

2. The problem of the closure of the new window has been largely solved by the technic now being used.

3. The hearing after a successful fenestration operation generally surpasses that secured with a hearing aid (figs. 11 and 12).

4. The fenestration operation is not always successful, and the hearing may be made worse in the operated ear. For this reason the poorer hearing ear should always be selected for operation.

5. A hearing improvement maintained for more than six months after fenestration may be regarded as probably permanent.

6. Properly done, the fenestration operation carries little risk to life, health or useful hearing.

7. With proper selection of cases and with the improvements in technic, 88.9 per cent of 117 patients operated on over a three and one-half year period now have a significant hearing improvement.

122 South Michigan Avenue.

DIABETES MELLITUS IN HARLEM HOSPITAL OUTPATIENT DEPARTMENT IN NEW YORK

A COMPARISON OF CERTAIN ETIOLOGIC FACTORS IN NEGRO AND WHITE PATIENTS

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Diabetes mellitus was formerly considered an uncommon disease in the Negro. This impression, once having been established, is hard to eradicate unless one is confronted with actual cases in a Negro community. The study now being reported certainly negates the idea of the rarity of this disease in the Negro race and probably indicates its prevalence to as great a degree as in the white race.

Harlem Hospital in upper Manhattan of New York City serves a population which is preponderantly Negro, with a fair percentage of Puerto Ricans of Negro extraction. The district extends east of St. Nicholas Avenue from One Hundred and Tenth Street on the south to the Harlem River on the north. It is estimated that there are 425,000 colored people in the five boroughs of New York City. This is 5.7 per cent of the total city population, 400,000 of whom are Negroes,[1] 200,000 of these in the Harlem district.

The past six years have shown a very definite increase in the number of diabetic patients treated in the outpatient department clinic as judged by the records. While the number of patients in the general medical clinic also has increased, the figures for the diabetic show a larger proportionate rise (table 1). Thus while there was approximately a 20 per cent increase in the new and referred patients in the general medical clinic in five years, the increase in the number of new diabetic patients registered was over two and one-half times the 1936 figure. The same proportion exists in the total number of diabetic patients registered in the clinic.

In 1936 there were approximately 500 diabetic patients who attended the diabetic clinic. By the end of 1939 there were approximately 1,500 diabetic patients on our rolls. The reasons for this increase in registration are not all apparent. One factor, although not the sole one, is the extra money for the special diets added to the allowance given relief "clients." This brings the diabetic to the clinic for special diets and so may account for some of the increase, but we do not see a proportionate increase in the general medical clinic, where special diets also are prescribed. That this increase in diabetes among the Negroes is not merely apparent is better evidenced by the mortality statistics[2] obtained from the Board of Health of New York City for the year 1937 (table 2).

There were more deaths charged to diabetes in 1937 than in any other preceding year. Table 3 shows that the diabetic death rate[3] has been increasing every year with the exception of 1935. In seven years the death rate has increased from 27.2 to 34.5, an increase of 27

From the Metabolic Service of Harlem Hospital, Dr. Oswald LaRotunda, Medical Director.

1. Board of Health, Vital Statistics, 1938 ed., pp. 278-280.
2. New York Health Department, Vital Statistics, 1937 ed., p. 285.
3. Health of New York City's Millions, 1938 ed., pp. 278-280.

per cent. The greatest increase was in Negro females, 76 per cent, while white females increased 26 per cent, white males 23 per cent and Negro males 15 per cent.

The diabetic death rate does not reach large proportions until 45. The main reason is the change in the method of classification, which lists diabetes as the cause of death even though heart disease or nephritis is involved. This adds to the diabetic death rate even though diabetes may be an associated disease rather than the actual cause of death.

It is estimated that there are 424,000 colored people in New York City, of whom approximately 400,000 are Negro. This is 5.1 per cent of the total population. Compared to these figures are those of Leopold in Baltimore for the year 1930: death rate, white 22.02 per hundred thousand (for diabetes) and colored 30.1 per hundred thousand.

This study was based on 745 patients who attended the diabetic outpatient clinic with some regularity and for whom the diagnosis of diabetes mellitus was established and confirmed. There were 639 Negroes, or 85.75 per cent, and 106 white persons, or 14.25 per cent, and 2 of other races, of the whole clinic group. Of females 511, or 87 per cent, were Negroes and 68, or 13 per cent, white. Of males 128, or 77 per cent, were Negroes and 38, or 23 per cent, white. The proportion

TABLE 1.—*Increase in Number of Patients in Medical Clinic and Diabetic Clinic at the Harlem Hospital Outpatient Department*

	Medical Clinic		Diabetic Clinic	
Year	New Patients and Referrals	Total Visits	New Patients and Referrals	Total Visits
1935	9,200	46,434	130	2,900
1936	9,659	61,014	213	3,293
1937	10,350	66,974	332	5,327
1938	12,117	84,313	187 (?)	6,751
1939	12,053	85,114	346	6,876

of female Negroes to male Negroes is 4:1, or 80 per cent to 20 per cent. Leopold [4] gave the proportion as 3½:1. The proportion of females to males among the white patients in this group was 64 per cent females and 36 per cent males. The percentage of female white patients to male white patients in other series is 55:45 (Joslin [5]) and for female diabetic patients he quotes 57.4 per cent in his 15,000 diabetic patients.

The distribution of Negroes according to age groups is given in table 4, and of white persons according to age groups in table 5. Thus there appears to be a larger percentage of Negroes in the groups 30-39 and 40-49 than among the white patients. The latter have more diabetic patients in the fifth and sixth decades proportionately than the Negroes. These figures broken up into sex distribution for each race are given in table 6.

The percentage distribution for white males and white females according to age at examination corresponds, with minor variations, to the figures given by Joslin.[6]

According to our figures there is a greater percentage in the 30-39 and 40-49 groups among the Negro than among the white patients in both males and females. As a whole, the average female and male Negro diabetic patient is younger than the average white diabetic patient.

4. Leopold, E. J.: Ann. Int. Med. **5**: 285 (Sept.) 1931.
5. Joslin, E. P.: Treatment of Diabetes Mellitus, ed. 6, Philadelphia, Lea & Febiger, 1937.
6. Joslin: Treatment of Diabetes Mellitus, table 10.

AGE AT ONSET

The onset of diabetes in the Negro occurs at a much earlier age than among white persons. In tables 7 and 8, analyzed by five year groups, one sees a definite spurt in the female diabetic patients at the age 35-39, with 15.1 per cent of the total female Negro group,

TABLE 2.—*Deaths in 1937*

Deaths from all causes in 1937:		
Male		42,072
Female		35,393
White male		38,732
White female		32,532
Negro male		3,122
Negro female		2,847
This gives: 11.0 white males per 1,000 of population		
9.3 white females per 1,000 of population		
15.9 Negro males per 1,000 of population		
13.3 Negro females per 1,000 of population		
Deaths from diabetes in 1937: 2,269 = 2.9% of the total deaths		
Of the diabetic deaths there were:	Number	Rate per 100,000
White male	828	23.7
White female	1,728	44.7
Negro male	28	22.9
Negro female	86	57.7

whereas the female white group is 5.1 per cent. The age group 35-44 for the female Negro is 30.2 per cent and for the female white patient 18.7 per cent.

The age at onset for white diabetic patients as given by Joslin [5] corresponds to that for white diabetic patients in our group aged 35-44. Thus there is a perceptible tendency for the onset of diabetes to occur at an earlier age group in the Negro than in the white race. This is still more apparent when compared to Joslin's figures compiled from a larger white group than our own. His tables show a percentage of 30.8 for female white patients aged 35-49, whereas our percentage is 45.9 for female Negroes aged 35-49, 15 per cent more than for the corresponding age groups of white patients.

HEREDITY

In a race in which not until recently have there been adequate facilities for medical care and the economic level has frequently precluded the services of a physician until the very end, one cannot expect too much accuracy as to knowledge of cause of death of relatives. Despite this we were able to obtain a positive history of diabetes in some other member of a family in 14.7 per cent of our female Negro patients. The figures are given in table 9. The statistics as compiled from Joslin's clinic [5] show an incidence of diabetes in the

TABLE 3.—*Diabetic Death Rate per Hundred Thousand by Color and Sex, 1931 to 1939*

		White		Negro	
Year	All Persons	Male	Female	Male	Female
1931	27.2	19.2	35.6	19.9	32.7
1932	29.5	20.7	37.8	21.9	46.8
1933	30.1	21.2	37.5	21.4	59.4
1934	30.8	22.0	39.0	21.9	51.3
1935	30.2	20.4	39.4	17.7	53.5
1936	34.0	23.8	42.9	28.6	56.6
1937	34.5	23.7	44.7	22.9	57.7
1938	35.4	23.9	43.0	27.4	61.4
1939	38.8				
Total deaths	2,938	970	1,968	39	117

families of his patients as 24.5 per cent. We believe that this incidence of heredity will rise as time goes on because of more accurate information and knowledge regarding the cause of death among relatives of Negroes. The figures for female Negro heredity and family history and for white heredity and family history are almost alike, 14.7 per cent for Negro family history and 15.3 per cent for white family diabetes history.

TABLE 4.—*Distribution of Negroes According to Age Groups*

Age	No. of Cases	Per Cent
10 - 19	5	0.8
20 - 29	11	1.7
30 - 39	65	10.2
40 - 49	172	26.9
50 - 59	217	33.9
60 - 69	136	21.3
70 - 79	33	5.2
Total	639	

The male Negro positive family history is 10.8 per cent, whereas for white men in a much smaller group it is 26.3 per cent. The positive family history in Negroes both male and female is 13.8 per cent, and in white patients male and female combined it is 19.6 per cent.

These figures for hereditary and familial incidence of diabetes mellitus in the Negro race are sufficiently prominent to place heredity as an etiologic factor in diabetes mellitus in the Negro race.

OBESITY

Table 10 gives the weights for the four groups of diabetic patients at the time of admission to the clinic. For most of the patients it was difficult to obtain maximum weights and weights at onset, and for that reason an attempt to tabulate this information was abandoned.

Many factors are at work influencing the weights of the Negro population in this community. Dietary habits have been influenced by migration from the South to the North, and again a long period of economic depression certainly has been responsible for alterations in type and quantity of the food ingested. This probably accounts for the larger number of underweight female Negroes than underweight female white patients. The overweight group, strikingly enough, is the same in white and Negro females, 61.8 per cent to 61.4 per cent respectively. Also noteworthy is the greater proportion of overweight female Negroes to male Negroes, 61.4 per cent to 46.1 per cent.

TABLE 5.—*Distribution of White Patients According to Age Groups*

Age	No. of Cases	Per Cent
10 - 19	2	1.9
20 - 29	4	3.8
30 - 39	6	5.7
40 - 49	19	17.9
50 - 59	38	35.8
60 - 69	31	29.2
70 - 79	6	5.7
Total	106	

Undoubtedly other endocrine deficiencies are present in the female. The Negro males show a 15 per cent higher incidence of obesity than white males, 46.1 per cent to 31.6 per cent. The percentages given by Joslin [5] are for overweight females 67.4, males 62.7; normal females 13.6, males 17.0; underweight females 10.0, males 19.4. Our female group, both white and Negro, is somewhat comparable to Joslin's group: 61 per cent in our group to an average of 67 per cent in his group.

SEVERITY OF DIABETES (INSULIN)

The diets prescribed vary between carbohydrate 100, protein 70, fat 70 and carbohydrate 200, protein 70, fat 70. The average diet is carbohydrate 135, protein 70, fat 70. The insulin requirements are given in table 11.

A comparison of both white and Negro female diabetic patients shows approximately the same proportion, about 25 per cent, carried without insulin in the two groups. The Negroes have more in the mild and moderate groups than do the white patients, and less in the severe groups. While the figures are not preponderantly conclusive, the Negroes seem to have a larger percentage in the mild groups than do the white patients.

DURATION OF DIABETES

Of female Negroes there were 520 with diabetes of one to thirty years' duration, the average being five and one-tenth years.

TABLE 6.—*Sex Distribution According to Race*

	Negroes				White Patients			
	Female		Male		Female		Male	
Age	No. of Cases	Per Cent	No. of Cases	Per Cent	No. of Cases	Per Cent	No. of Cases	Per Cent
10 - 19	3	0.6	2	1.6	..	...	2	5.3
20 - 29	8	1.6	3	2.3	1	1.5	3	7.9
30 - 39	55	10.8	10	7.8	2	2.9	4	10.5
40 - 49	129	25.2	43	33.6	12	17.6	7	18.4
50 - 59	181	35.4	36	28.1	29	42.6	9	23.7
60 - 69	109	21.3	27	21.1	20	29.4	11	28.9
70+	26	5.1	7	5.3	4	5.9	2	5.3

Of female white patients there were 68 with diabetes of one to eighteen years' duration, the average being five and seven-tenths years.

Of male Negroes there were 68 with diabetes of one to twenty years' duration, the average being four and five-tenths years.

Of male white patients there were 39 with diabetes of one to twenty-eight years' duration, the average being seven and seven-tenths years.

The female white and Negro patients average about the same duration of diabetes. The male white average duration is seven and seven-tenths years, a much longer duration for white males than for Negro males.

COMMENT

In a disease like diabetes it is difficult to step in and draw sharp conclusions from a group of 639 patients compared to a much smaller white group, 106. However, the group is large enough and the patients are sufficiently cooperative to enable us to draw certain conclusions.

The apparent increase of diabetic registration in the clinic during 1935-1939 leads to the conclusion that diabetes mellitus in the Negro is on the increase. That this is more real than apparent is evidenced by the increase in diabetic deaths throughout the city during a similar five year period. The increase in female diabetic deaths reached 76 per cent in 1937.

The sex distribution in the Negro is preponderantly female, 4:1. Leopold [4] found the proportion to be 3½ females to 1 male. The proportion of female white patients to male white patients in our series was approximately 2:1. Joslin, as previously reported, had 57.4 per cent females.

Another factor in which the Negro diabetic patient varies from the white diabetic patient is the age at examination. There seems to be a higher percentage of Negroes in the third and fourth decades than of white patients; 37.1 per cent of all Negro diabetic patients are in age group 30-49, whereas 23.6 per cent of the white patients are in this group. Joslin's figures for white patients and our figures for the same groups are approximately the same.

As in other degenerative diseases, the onset of diabetes mellitus in the Negro comes at a much earlier age than it does in white patients. Boyce,[7] in a recent article on gastric carcinoma, says "As a matter of interest it might be mentioned that 25 of 38 patients (with gastric carcinoma) under 40 years of age were Negroes" and substantiates Garther's statement that this disease develops at an earlier age in the Negro than in the white subject. Although gastric carcinoma and diabetes mellitus are not related conditions, the comment on the origin in the Negro at an earlier age group is of interest.

TABLE 7.—*Age at Onset*

	Female				Male			
	Negro		White		Negro		White	
Age	No. of Cases	Per Cent	No. of Cases	Per Cent	No. of Cases	Per Cent	No. of Cases	
0 - 4	0	...	..	...	..	...	..	
5 - 9	1	0.2	..	...	..	...	..	
10 - 14	3	0.6	..	...	1	0.8	1	
15 - 19	3	0.6	..	...	1	0.8	2	
20 - 24	4	0.8	2	3.4	2	1.6	3	
25 - 29	15	3.0	1	1.7	3	2.3	2	
30 - 34	34	6.9	3	5.1	14	11.1	1	
35 - 39	75	15.1	3	5.1	12	9.5	5	
40 - 44	75	15.1	8	13.6	22	17.5	6	
45 - 49	78	15.7	14	23.7	19	15.1	3	
50 - 54	83	16.7	13	22.0	16	12.7	5	
55 - 59	67	13.5	7	11.9	17	13.5	4	
60 - 64	36	7.3	6	10.2	9	7.1	3	
65 - 69	20	4.0	..	....	10	7.9	2	
70 and over	2	0.4	2	3.4	..	....	..	
Total	495		59		126		37	

Our statistics warrant a similar comment: diabetes mellitus begins in a much earlier age group in the Negro than it does in the white race, 30.2 per cent of Negroes from 35 to 44 years of age and 18.7 per cent of white patients in our series, compared to Joslin's 30.8 per cent of white patients from 35 to 49 years and our series of 45.9 per cent of Negro females from 35 to 49 years.

As previously stated, the statistics on heredity and familial incidence must be considered as incomplete and as underestimating the true incidence. It is difficult to obtain an accurate family history in many cases both Negro and white, considering the economic and social level of the clinic patients. Despite this, the percentage of familial incidence is almost the same in our female Negroes as in our female white patients. Yet we know that in larger clinics of white patients, where the source of patients is of a higher economic and social level, the hereditary factor is higher than our figures for female white patients indicate; viz., 14.7 of Negro family history and 15.3 per cent of female white family history.

Joslin [5] reports a 24.5 per cent incidence of diabetes in families of diabetic patients.

TABLE 8.—*Age at Onset, According to Joslin* [5]

	Males		Females	
Age	Number	Per Cent	Number	Per Cent
All ages	3,124		3,233	
Under 5	66	2.1	51	1.6
5 - 9	90	2.9	91	2.8
10 - 14	118	3.8	112	3.5
15 - 19	102	3.3	85	2.6
20 - 24	125	4.0	77	2.4
25 - 29	164	5.3	138	4.2
30 - 34	205	6.6	142	4.4
35 - 39	254	8.1	219	6.8
40 - 44	322	10.3	314	9.7
45 - 49	397	12.7	463	14.3
50 - 54	415	14.7	507	15.7
55 - 59	336	10.7	429	13.6
60 - 64	271	8.7	299	9.2
65 - 69	118	3.8	187	5.8
70 - 74	68	2.2	69	3.1
75 - 79	27	0.9	33	1.0

We are satisfied that heredity is a factor in the Negro as it is in the white race and that as time goes on the percentage in Negroes will rise as the result of more disseminated knowledge of deaths among the relatives.

The female Negro is no exception to the fact that obesity is common among the diabetic. In fact, the percentage for the two groups is almost the same, 61.4 for Negro females and 61.8 for white females. Male Negroes show 46.1 per cent overweight and male white patients 31.6 per cent. Joslin's figures give a slightly higher incidence for female white patients, 67.4 per cent, and 62.7 per cent for male white patients. Both white and Negro males show a high percentage who are underweight, 36.8 to 35.2. Undoubtedly economic factors explain the higher rate of malnutrition in our male clinic patients than in Joslin's group.

Judging by insulin requirements of our clinic patients, there appear to be more female diabetic patients in the mildly affected group of 1-20 units of insulin than white females, 34.4 to 23 per cent respectively. This makes the percentage of no insulin and insulin under 20 units in Negro women 59 and in white women 48.5 per cent. The percentage is much less for severely affected female Negro diabetic patients than it is for the white, 17 to 29. This seems to confirm the general impression that diabetes is milder in the Negro than it is in the white race. One should not get a false sense of security from these figures, for diabetes mellitus certainly plays havoc with the Negro as judged by our hospital experience and by rising mortality statistics.

TABLE 9.—*Diabetes in Some Other Member of the Family*

Sex	Race	Number of Patients	No. Family History	Family History Unknown, Positive, per Cent		Positive, per Cent
Female	Negro	501	364	73	64	14.7
	White	59	50	9	0	15.3
Male	Negro	130	116	14	0	10.8
	White	38	28	10	0	26.3
Total	Negro	631	480	87	64	13.8
	White	97	78	19	0	19.6

7. Boyce, F. F.: Carcinoma of the Stomach in a Large General Hospital, J. A. M. A. **117**: 1670 (Nov. 15) 1941.

In our study of the duration of diabetes in the four groups, only the male white patient shows an average duration decidedly longer than the male Negro or female groups, seven and seven-tenths years for male white patients, about five years for females of both races and four and five-tenths years for male Negroes.

SUMMARY AND CONCLUSIONS

1. The number of new and referred diabetic patients at the Harlem Hospital outpatient department increased two and one-half fold in the 1935-1939 period. The total number of registered diabetic patients has tripled in the same period.

2. The mortality for female Negro diabetic patients has increased 76 per cent in seven years, while for female white diabetic patients it has increased 26 per cent in the same period.

3. Female Negro diabetic patients predominate: 4 females to 1 male.

4. The average female and male Negro is younger than the average white diabetic patient.

TABLE 10.—*Weights of Diabetic Patients*

Sex	Number of Patients	Normal 5%	Underweight	Overweight
Female Negroes	511	20.2	18.4	61.4
Female white patients	68	26.5	11.8	61.8
Male Negroes	128	18.8	35.2	46.1
Male white patients	38	31.6	36.8	31.6

TABLE 11.—*Insulin Requirements*

	Negro Females		Female White Patients	
	Number	Per Cent	Number	Per Cent
No insulin	122	24.5	15	25.5
1 - 20 units	171	34.4	14	23
21 - 40 units	121	24	14	23
41 units plus	83	17	16	29
Total	497		59	

5. The onset of diabetes is much earlier in the female Negro than in the female white patient.

6. Heredity and familial incidence are factors in the Negro diabetic etiology.

7. Obesity predominates and is just as common in the female Negro as it is in the female white diabetic patient. Undernutrition is slightly higher in both male and female Negro diabetic patients than in white groups.

8. The Negroes appear to have higher percentages in the noninsulin and mild diabetic groups than do corresponding groups of white patients.

9. The duration of diabetes in the clinic patient is the same for Negro and white female diabetic patients, only the white male has had diabetes a longer time.

350 Central Park West—811 Walton Avenue.

Social Evolution.—History shows, however, three prominent directions in which man's social evolution is proceeding: (1) the invention and development of new technics for supplying our wants, (2) the understanding of nature and apparently (3) the consideration of the rights of others. There is no reason to suppose that a modern child brought up in a primitive community would differ in any of these regards from his primitive associates. That is, the differences are not individual changes but social changes, occurring through the continued interaction of people on each other.—Compton, Arthur H.: Science, Religion and a Stable Society, *Assn. Am. Coll. Bull.* **26:**206 (May) 1940.

DIGITALIS IN ARTERIOSCLEROTIC (CORONARY) HEART FAILURE

WITH NORMAL RHYTHM

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During the past twenty years, since the work of Janeway [1] and Christian [2] on the use of digitalis in heart failure with normal rhythm, the attitude toward the prognosis and treatment of myocardial insufficiency has been altered considerably. Not so very long ago Parkinson and Clark-Kennedy [3] reported 100 unselected cases of severe congestive failure with normal rhythm and stated "This series has only been obtained by searching several large hospitals over a period of two years." They implied that the arrythmias, especially auricular fibrillation with severe failure, were far more common.

Luten [4] and Marvin [5] administered digitalis in suitable large doses under properly controlled conditions to patients with advanced congestive heart failure, regular rhythm and considerable edema and noted improvement mainly in one group, that designated as "arteriosclerotic heart disease." Clinical improvement was noted also as the result of the use of digitalis in certain cases of heart failure with normal rhythm but without edema.[6] The drug was considered of great benefit for patients with paroxysmal dyspnea and of some value for many patients with dyspnea brought on by exertion, both groups having a normal rhythm.[7]

Stewart and his co-workers [8] delved further into the matter and concluded that digitalis decreases the cardiac size, which was interpreted as an effect on tone. Gavey and Parkinson [9] generalized that digitalis is always indicated in congestive heart failure irrespective of the rhythm, but it is often inefficient, as it fails completely in about a third of the cases. Harrison [10] considered the essential action of digitalis as consisting of an increase in the efficiency of the heart by diminishing dilatation, but Gold and Cattell [11] stated that the heart muscle is not overdistended in clinical heart failure. Apart from the action of digitalis on the heart size during decompensation, there is also the question of the effect of the drug on the heart rate during congestive failure. The consensus today seems to be that the drug is effective in heart failure with normal rhythm

The digitalis preparation used in this study was supplied by Parke, Davis & Co.

1. Janeway, T. C.: The Comparative Value of Cardiac Remedies, Arch. Int. Med. **13:** 361 (March) 1914.

2. Christian, H. A.: Digitalis Therapy; Satisfactory Effects In Cardiac Cases with Regular Rate, Am. J. M. Sc. **157:** 593, 1919.

3. Parkinson, J., and Clark-Kennedy, A. E.: Heart Failure With Normal Rhythm, Quart. J. Med. **19:** 113, 1926.

4. Luten, Drew: Clinical Studies of Digitalis: I. Effect Produced by the Administration of Massive Dosage to Patients with Normal Mechanism, Arch. Int. Med. **33:** 251 (Feb.) 1924.

5. Marvin, H. M.: Digitalis and Diuretics in Heart Failure with Regular Rhythm, J. Clin. Investigation **3:** 521, 1927.

6. Hay, J.; Jones, H. W., and Ince, P.: Action of Digitalis in Cardiac Failure with Normal Rhythm, Quart. J. Med. **21:** 153, 1927.

7. Harrison, T. R.; Calhoun, J. A., and Turley, F. C.: Congestive Heart Failure: XI. Effect of Digitalis on the Dyspnea and on the Ventilation of Ambulatory Patients with Regular Cardiac Rhythm, Arch. Int. Med. **48:** 1203 (Dec.) 1931.

8. Stewart, H. J.; Deitrick, J. E.; Crane, N. F., and Wheeler, C. H.: Action of Digitalis in Uncompensated Heart Disease, Arch. Int. Med. **62:** 569 (Oct.) 1938.

9. Gavey, C. J., and Parkinson, J.: Digitalis in Heart Failure with Normal Rhythm, Brit. Heart J. **1:** 27, 1939.

10. Harrison, T. R.: Failure of the Circulation, Baltimore, Williams & Wilkins Company, ed. 2, 1939, p. 386.

11. Gold, Harry, and Cattell, McKeen: Mechanism of Digitalis Action in Abolishing Heart Failure, Arch. Int. Med. **65:** 263 (Feb.) 1940.

irrespective of the rate.[12] Wood[13] however stated that, while it is generally accepted that digitalis may be of benefit in cases of congestive heart failure with normal rhythm, there is disagreement as to the frequency of such benefit, as to whether the etiologic type of heart disease influences the response and as to the mechanism whereby the improvement is brought about.

In an effort to determine some of the problems involved, a study was made of the use of digitalis in heart failure with normal rhythm in which the underlying heart disease was due to one of the four important etiologic factors (hypertension, rheumatic fever, syphilis or coronary arteriosclerosis). The etiologic groups were considered separately, as it is my opinion that the factor underlying the heart disease does influence the response.[14] Therefore, in this study the effect of digitalis was investigated in an older group of patients with uncomplicated arteriosclerotic (coronary) heart failure and normal rhythm. A group of 51 unselected patients whose congestive heart failure was on this basis were treated and the responses analyzed. As far as I could myself determine, all were decompensated for the first time, and none had any disturbance of rhythm or conduction.

There were 43 men (84 per cent) and 8 women (16 per cent), whose ages ranged from 53 to 88, with an average age of 69.4 years. Those with a normal

TABLE 1.—*Percentage of the Age Groups at the Onset*

Ages	Male	Female	Total	Per Cent
53-60	0	1	1	1.9
61-70	26	6	32	62.9
71-80	15	1	16	31.3
81-88	2	0	2	3.9
Totals	43	8	51	100.0

rate had an average age of 69, while the ones with sinus tachycardia had an average age of 69.9 years (table 1). These cases with normal rhythm represent 32 per cent of all patients with arteriosclerotic heart failure, ranking second in importance to auricular fibrillation, which occurs in 44 per cent of heart disease due to this condition. There was no history of hypertension or any of its sequelae in any of the 51 patients. The systolic blood pressure varied from 100 to 140 in 79 per cent, was between 140 and 150 in 13 per cent, and was below 100 in 8 per cent. Ninety-eight per cent of the patients had a diastolic blood pressure below 90 mm. of mercury, while in the other 2 per cent it was between 90 and 100 mm.

As to the size of the heart during congestive failure, in 91 per cent of the patients the left heart border was percussed 9 to 12 cm. from the midsternal line in the fifth intercostal space. Allowing for a known personal error of approximately 1 cm. on cardiac percussion, these hearts were considered to be only slightly to moderately enlarged. When compared with the average heart size when the underlying cause of the heart disease was hypertension, rheumatic fever or syphilis, these hearts were much less enlarged. Enlargement of the right heart border beyond the right parasternal line in the fourth intercostal space was not noted by percussion in 93 per cent.

12. Luten.[35] Christian.[3] Gavey and Parkinson.[9]
13. Wood, P.: The Action of Digitalis in Heart Failure With Normal Rhythm, Brit. Heart J. **2**:132, 1940.
14. Flaxman, Nathan: Unpublished data.

These patients were divided into two groups, those with a normal rate (61 to 99) and those with sinus tachycardia (100 to 150). If the effect of digitalis was mainly on the rate, then it was thought that the results should be somewhat similar in the two groups. Further, if it was the reduction in rate that brings about improvement and restores compensation, the results should be better in those with a sinus tachycardia. For purposes of analysis, the two groups were considered from various points of view.

TABLE 2.—*Duration of Symptoms Previous to Use of Digitalis*

	Normal Rate		Sinus Tachycardia		Totals	
Duration	Cases	Mortality, %	Cases	Mortality, %	Cases	Mortality, %
1 month or less	8	0	6	50.0	14	21.0
1-2 months	3	0	2	50.0	5	20.0
2-4 months	3	0	2	50.0	5	20.0
4-6 months	3	0	1	0.0	4	0.0
6 months-1 year	6	16.0	1	0.0	7	14.0
1-2 years	4	0	3	100.0	7	42.0
2-5 years	2	0	5	80.0	7	56.0
Over 5 years	2	50.0	0	.....	2	50.0
Totals and average mortality	31	6.4	20	60.0	51	27.0

DURATION OF SYMPTOMS

A striking difference in the mortality of the two groups was noted even before the use of digitalis was considered. Those with a normal rate had a mortality of 6.4 per cent, and in those with sinus tachycardia it was 60.0 per cent (table 2). Regardless of whether the symptoms were of one month or of one to two years in duration before treatment with digitalis was started, this difference in mortality was apparent section by section.

TYPE OF HEART FAILURE

The combined type of right and left sided failure, denoted by both the symptoms and the signs of systemic congestion, was present in 25 (49.1 per cent), while isolated failure of the left ventricle, denoted by symptoms and no signs of systemic congestion, was found in 26 (50.9 per cent) of the patients. Not only was there a decided difference in the mortality of these two groups (table 3), but there was an even greater difference between those with a normal rate and those with a tachycardia. Moreover, among the patients with the combined type of failure, which has a less favorable prognosis than isolated failure of the left ventricle, the mortality was eight and five-tenths times greater in the 13 with a tachycardia as compared with the 12 who had a normal rate.

TABLE 3.—*Type of Heart Failure in Relation to the Mortality*

	Normal Rate		Sinus Tachycardia		Totals	
Type	Cases	Mortality, %	Cases	Mortality, %	Cases	Mortality, %
Combined ventricular failure	12	8.3	13	76.0	25	44.0
Left ventricular failure	19	5.2	7	28.0	26	11.0

PERIOD OF USE OF DIGITALIS

The length of time required to restore compensation by treatment with digitalis offers prognostic significance, for the longer it takes to restore a patient the less favor-

able the outlook. Here again there was a distinct difference in the mortality of the two groups (table 4). Except for the two deaths among those with a normal rate, only 1 of the remaining 29 patients required more than a month to restore compensation, and 19 (65 per cent) of the 29 were fully compensated within two weeks after treatment with digitalis was started.

CAUSES OF DEATH

Congestive heart failure was the most common cause of death (table 5). However, only one death in those with a normal rate was due to this cause. This

TABLE 4.—*Period of Use of Digitalis to Restore Compensation*

Period	Normal Rate		Sinus Tachycardia		Totals	
	Cases	Mortality, %	Cases	Mortality, %	Cases	Mortality, %
2 weeks or less...	20	5.0	10	50.0	30	20.0
3 weeks	7	13.0	4	50.0	11	27.0
4 weeks	3	0.0	3	66.0	6	33.0
6 weeks	....	.....	1	100.0	1	100.0
8 weeks	1	0.0	2	100.0	3	66.0

occurred in a 67 year old woman with a history of six months' duration, who had a combined ventricular failure when first seen and who failed to respond to adequate doses of digitalis within a period of three weeks when death occurred due to congestive heart failure. Of the nine deaths due to this cause among those with a sinus tachycardia, all had combined failure at the time treatment was instituted. There was one sudden death of a patient with sinus tachycardia, a man aged 60 who gave a history of dyspnea, cough and edema of three weeks' duration, with all the signs of systemic congestion. On the eleventh day of treatment, when he appeared to be making a good recovery, sudden death occurred unexpectedly. An autopsy revealed severe coronary sclerosis with a partial occlusion of the left coronary artery, and myomalacia of the anterior wall of the left ventricle. Without an autopsy this sudden death would have been considered due to overdigitalization, even though there were no clinical signs of such intoxication.

COMMENT

As stated previously, our outlook has been altered considerably because we are seeing decompensated patients much earlier than in former years. The time may come, although it is only fifteen years since there was such difficulty in finding cases of normal rhythm, when the majority of decompensated patients will be seen early enough to institute treatment with digitalis while isolated failure of the left ventricle and normal rhythm are present. Such cases respond well to digitalis and have the best prognosis, even though the underlying cause of the heart disease is on an arteriosclerotic (coronary) basis and the patient is advanced in years.

Digitalis exercises an action on the ventricular muscle which is beneficial independently of any particular cardiac mechanism and altogether aside from any effect on rate.[15] This study on coronary heart failure substantiates the view. If the effect were primarily on the rate, the results among those with tachycardia would have been better than among those with a normal rate. Since the primary action of the drug is on the heart muscle, this secondarily may bring about a reduction in rate. Moreover, there was little or no change in the heart size among these patients, so that such a characteristic could not be attributed to digitalis.

The increase in the size of the heart which occurs in congestive failure is a compensatory mechanism, but an adequate supply of oxygen is essential for hypertrophic changes to occur either in compensated or in uncompensated hearts. Anoxemia of the muscle is brought about by one of two changes, which, however, may occur concurrently: (1) alterations in the coronary arteries and (2) a great increase in muscle mass (hypertrophy) with a subsequent demand for a greater capillary blood supply, which in turn is usually compensated by enlargement of the heart. In coronary heart disease the alterations in the arteries already exist which lead to anoxia of the muscle so that hypertrophy does not occur. Besides, dilatation of the heart is not usually an unfavorable phenomenon but an adaptive mechanism by which the failing heart maintains its optimal capacity for work.[11] Therefore, when the demands made on the heart both by the patient and by the anoxia of coronary atherosclerosis are too great, it dilates in order to work harder to bring more blood, and with it more oxygen, to an already handicapped myocardium. Finally the only compensatory mechanism that remains is an increase in rate. In turn, the tachycardia not only goads the weak muscle to more frequent contractions but deprives the already embarrassed myocardium of adequate nourishment.

It has been suggested that under such conditions the slight to moderate increase in the cardiac size is not a compensatory mechanism but is due to an increase in the water content of the myocardium.[16] Also, as stated by Boyer and Poindexter,[17] the beneficial effect of digitalis in cardiac failure may be brought about in part by a cortin-like action on the myocardium, whereby potassium is maintained within the cell and cell hydration is improved. This may account for the marked difference in the mortality of the two groups with normal rhythm. In those with a normal rate the permeability of the muscle cell to vital electrolytes is altered but reversibility is still possible, while in those with a tachycardia which in itself has exhausted the heart muscle the cell permeability is so completely affected that there is much less chance of repair.

TABLE 5.—*Causes of Death in Fourteen Cases*

Causes	Normal Rate		Sinus Tachycardia		Totals	
	Cases	Mortality, %	Cases	Mortality, %	Cases	Mortality, %
Congestive heart failure	1	50.0	9	75.0	10	71.0
Coronary occlusion	..	.....	3	25.0	3	22.0
Uremia	1	50.0	....	.....	1	7.0
Totals	2	100.0	12	100.0	14	100.0

Some explanation is necessary as to the strength of digitalis used in this study because of a warning recently issued.[18] There is no question that the official U. S. P. XI powdered digitalis has a potency considerably greater than the U. S. P. X digitalis employed prior to 1936. Difficulty has arisen not only because of the acceptance of the U. S. P. XI unit by some, but not by all, of the nationally known pharmaceutic firms but because of

15. Luten, Drew: The Clinical Use of Digitalis, Springfield, Ill., Charles C. Thomas, 1936.

16. Gross, H.: Water Content of the Myocardium in Hypertrophy and Chronic Congestive Failure, J. Lab. & Clin. Med. **25**: 899, 1940.

17. Boyer, P. K., and Poindexter, C. A.: The Influence of Digitalis on the Electrolyte and Water Balance of Heart Muscle, Am. Heart J. **20**: 586, 1940.

18. Bland, E. F., and White, P. D.: The Strength of Digitalis in Clinical Use: A Warning, J. A. M. A. **117**: 1243 (Oct. 11) 1941.

the failure of those who have accepted the U. S. P. XI unit to offer a suitable explanation of the change. The original container of the digitalis preparation used in this study was labeled on the front, as follows: "Each kapseal represents 1 U. S. P. Digitalis unit, 1 International Unit, 1 cc. (15 minims.) Tr. Digitalis U. S. P. XI." On the side of the container was this statement: "0.1 Gm. (1½ grains) digitalis fat-free per kapseal—approximately one cat unit per kapseal." However, in the pamphlet that came with the container there was this statement: "The activity is determined physiologically by the method official in the U. S. P. XI, and known as the Minimum Systolic Dose (M. S. D.) Frog Heart Method or more commonly called the 'One hour frog heart method.'"

Such labeling may be necessary to meet the requirements of the new food and drug laws, but to those of us in practice who actually use the contents of such containers it is very confusing. No 2 patients require the same amount of digitalis for either digitalization or maintenance, and the dose for each is best considered in grains or in minims, regardless of the method used for standardization.

Bland and White [18] consider U. S. P. XI powdered digitalis 33 to 50 per cent stronger clinically than that previously employed. In the treatment of congestive heart failure with normal rhythm on a coronary basis it should be considered at least 50 per cent stronger than the older digitalis. Previous to 1936 an elderly decompensated patient could readily be given from 4½ to 9 grains (0.3 to 0.6 Gm.) of digitalis a day for the first three days with comparative safety, and after that the dose could be gradually reduced until compensation was reestablished. With the new digitalis it is no longer safe to give more than 3 to 4½ grains (0.2 to 0.3 Gm.) for the first two days, and it is wise to have the medication omitted one day a week. In the elderly patient with coronary heart failure and a normal rhythm it may be homicidal to "push" digitalis for a rapid effect or in large doses. Toxic manifestations are common even in doses that were once considered moderate. In this series of 51 cases, larger doses of digitalis did not alter the outcome among those with sinus tachycardia and only made those with a normal rate more susceptible to a toxic reaction. For the action of digitalis is primarily on the myocardium and not on the cardiac pacemaker.

SUMMARY

1. The action of digitalis on 51 patients with arteriosclerotic (coronary) heart failure with normal rhythm was studied.

2. The patients were divided into two groups: those with a normal rate (31 or 61 per cent) and those with sinus tachycardia (20 or 39 per cent).

3. Digitalis was most effective on those with isolated failure of the left ventricle and a normal rate, and least effective on those with combined ventricular failure and sinus tachycardia.

4. The action of digitalis is primarily on the myocardium and not on the cardiac rate, as noted by the mortality of 6.4 per cent in those with a normal rate and 60.0 per cent in those with sinus tachycardia.

5. The use of increased amounts of the newer digitalis, U. S. P. XI, only brought on early toxic reactions and had no effect on the mortality.

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TIC DOULOUREUX OF THE NERVUS INTERMEDIUS

(SO-CALLED IDIOPATHIC GENICULATE NEURALGIA)

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As a result of his observations of herpes, plus reports of sensory change and pain accompanying the peripheral type of facial palsy, Hunt [1] first described what he called geniculate neuralgia. He drew a close parallel between the sensory and motor systems of the fifth and seventh cranial nerves and described a "geniculate zone" affected by pain or herpes, stating that in this condition the primary disorder was in the geniculate ganglion. He described this so-called "geniculate zone" as lying within a cone shaped area represented by the tympanic membrane, the walls of the auditory canal, the external meatus, the concha, the tragus, the antitragus and the antihelix. He said, however, that the ninth and tenth cranial nerves were also represented in this area.

In 1909 Clark and Taylor [2] reported a case of tic douloureux of the sensory filaments of the facial nerve: A woman aged 28 had for two years had severe paroxysmal pains just in front of the left ear. After approximately eight months the stabbing pain in front of the ear continued and, in addition, a steady pain developed which was "deep in the ear and on the anterior wall of the external meatus." Because of the pain the patient was taking 12 grains (0.8 Gm.) of morphine daily. A diagnosis of tic douloureux of the geniculate system of the facial nerve was made and on April 23, 1909, Taylor reflected a small osteoplastic flap so as to expose the lateral lobe of the cerebellum. The dura was opened, the region of the cerebellopontine angle was exposed and section of the facial nerve, the nervus intermedius and the upper fasciculus of the eighth nerve was done. The dura was closed tightly and the bone flap was replaced. The patient was relieved of her pain immediately but had a complete peripheral type of facial paralysis; this facial paralysis later cleared up. She was observed for a period as long as six years after operation and there was no recurrence of her pain. According to the report, all sensory examinations of the face and ear proved negative three days after operation. The former area of pain seemed to be "a little less sensitive."

Until 1933 this case was alone and undisputed in the literature. In that year, however, Reichert [3] reported a case in which there was similar pain. According to him, there were paroxysms of "sharp, stabbing pain deep in the external auditory canal causing the patient to shriek out and grab her ear." There were also "itching of the upper anterior wall of the meatus, aches and pains of the left side of the face, nose, eyeball and parieto-occipital area and sensitiveness in the mastoid and

From the Neurosurgical Service, Department of Surgery, Washington University School of Medicine, and the Barnes Hospital.

1. Hunt, J. R.: Herpetic Inflammations of the Geniculate Ganglion: A New Syndrome and Its Complications, J. Nerv. & Ment. Dis. **34:** 73, 1907; The Sensory System of the Facial Nerve and Its Symptomatology, ibid. **36:** 321, 1909; A Further Contribution to the Herpetic Inflammations of the Geniculate Ganglion, Am. J. M. Sc. **136:** 226, 1908.

2. Clark, L. P., and Taylor, A. S.: True Tic Douloureux of the Sensory Filaments of the Facial Nerve, J. A. M. A. **53:** 2144 (Dec. 25) 1909.

3. Reichert, F. L.: Tympanic Plexus Neuralgia, J. A. M. A. **100:** 1744 (June 3) 1933.

pretragal regions." Since her symptoms were almost identical with the original case described by Clark and Taylor,[2] Reichert felt that this was a case of geniculate neuralgia, so under local anesthesia the cerebellopontine angle was exposed and the seventh and eighth nerves were touched. Pain in the auditory canal was produced

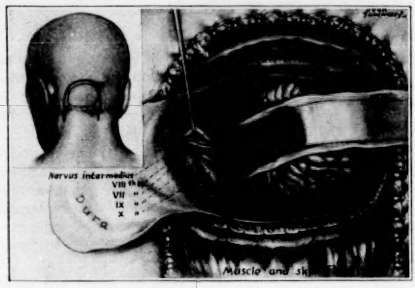

Fig. 1.—Exposure of the cerebellopontine angle; method of separation of nerves and section of nervus intermedius. Inset shows cutaneous incision and area of bone removal.

but it was not the tic pain. Touching the ninth nerve, however, did produce the characteristic tic-like pain, so this nerve was sectioned and the pain was completely relieved. No anesthesia of the ear or auditory canal could be demonstrated after operation, but there was the usual anesthesia of the pharynx that follows section of the glossopharyngeal nerve, which has been so well described by Dandy [4] and confirmed by other observers.

From this one case Reichert concluded that the case previously reported by Clark and Taylor [2] "was diagnosed as a tic douloureux of the sensory filaments of the seventh nerve but was probably cured by the decompressive feature of the cerebellar operation rather than by section of the seventh nerve." He also concluded that there were two types of glossopharyngeal neuralgia —"the common or complete tic douloureux of the glossopharyngeus is characterized by paroxysm of lancinating pain starting in the tonsillar fossa or base of the tongue, generally radiating deeply in the ear, accompanied by salivation and induced by swallowing, talking or other movements of the throat or tongue. The partial or Jacobson's plexus tic douloureux of the glossopharyngeus is characterized by paroxysms of lancinating pain in and about the external auditory canal and is not induced by any movements of the pharynx or tongue and is not accompanied by salivation. This neuralgia has heretofore been considered as a geniculate ganglion neuralgia. Intracranial division of the glossopharyngeal nerve has cured both types of these neuralgias." In attributing the cure in Clark and Taylor's [2] case to the decompressive features of the cerebellar operation, Reichert evidently overlooked the fact that in his description of the procedure Taylor states specifically that the bone flap was replaced and the dura was resutured completely. This, of course, would obviate any possibility of the operation serving as a cerebellar decompression.

Hunt [5] in 1937 reviewed the whole subject of geniculate neuralgia and admitted the validity of the statement that pain in glossopharyngeal neuralgia may be referred only to the ear, but he asserted that more frequently the pain of glossopharyngeal neuralgia, which begins in the ear, is later referred to some other portion of the area affected by the distribution of the glossopharyngeal nerve. He agrees that Reichert's conclusion in the case reported by him personally was justified, for the patient's pain was entirely relieved and the tic-like pain was reproduced on manipulation of the ninth cranial nerve. He denies, however, that Reichert's contentions in the case reported by Clark and Taylor were valid because he personally had seen the patient six years after the original operation, and at that time there had been no recurrence of pain. With Hunt's last statement I would agree, and the following case report will bear out this contention, for here again a patient with severe tic-like pain referred to the ear has been freed of that pain by section of the nervus intermedius.

REPORT OF CASE

Miss E. M. was referred by Dr. Perry Duncan of Taylorville, Ill., on May 24, 1940. She complained of pain, shooting in character and always starting in the left ear. She had never had any infections in the ear but in November 1939 she had what she thought was an earache. In the beginning the pain was chiefly of a "lightning variety" in the ear, recurring at frequent intervals but with periods of several days without pain. She had been treated by several otologists without any relief. Roentgenograms of her sinuses and of her mastoids were negative and no one had been able to find in the nose and throat any cause for the pain. On one occasion cocainization of the sphenopalatine ganglion apparently caused the pain to disappear for a short time, but repetition of this treatment did not influence the pain at subsequent dates. She stated specifically that the pain was not constant but would come and go spasmodically. She always described it as being deep in the ear, and at no time did she have pain in her throat, and the pain was never produced by swallowing. Occasionally she complained of headache, chiefly on the left side, and at infrequent intervals there would be some radiation of pain into the region around the left eye, but there was never any particular radiation of pain down the neck, and she never had the feeling of soreness deep in the tissues of her face, which has been previously described by other authors.

Neurologic examination at the time she was seen originally showed no abnormality of any importance. Her pupils were

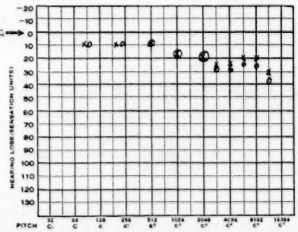

Fig. 2.—Hearing on the two sides approximately equal. No loss attributable to the operation. (Audiogram made on the tenth postoperative day.)

regular and equal and reacted promptly to light. The fundi were normal. The innervation of the face was equal on the two sides, and hearing was equal in the two ears. There was no disturbance of sensation on either side of the face, the palate was normally innervated and touching the posterior pharynx did not in any way produce the pain. The reflexes were all present and equal. There were no pathologic reflexes. When she opened her mouth wide there seemed to be some relaxation of the temporomandibular joint, so she was referred to Dr.

4. Dandy, W. E.: Glossopharyngeal Neuralgia (Tic Douloureux), Arch. Surg. **15**: 198 (Aug.) 1927.
5. Hunt, J. R.: Geniculate Neuralgia (Neuralgia of the Nervus Facialis), Arch. Neurol. & Psychiat. **37**: 253 (Feb.) 1937.

James B. Costen[6] to see whether he felt that a pathologic condition of the temporomandibular joint might be responsible for the pain. For a number of months she was treated by Dr. Costen and by her dentist for relaxation of the temporomandibular joint, but without any relief. In October 1940 she reported at the request of Dr. Costen to say that she was no better. She was positive at that time that there was no

Fig. 3.—Face at rest, showing no asymmetry.

relationship between the pain in the ear and swallowing. She reasserted that the pain was a definite spasmodic pain which would come and go quickly and was practically always felt only deep in the ear. She did occasionally have some shooting pain in back of the ear, but she felt that this was merely a secondary radiation of the pain in the ear. Talking, eating, swallowing—nothing that she would do seemed to influence the pain, and on many occasions it waked her from sleep. At that time she was put on large doses of vitamin B and was told to report back in two weeks. She reported back to the office at irregular intervals, always complaining of the same type of pain, and on Nov. 14, 1941 she was admitted to Barnes Hospital.

At this time her neurologic examination was still entirely negative. The blood Kahn reaction was negative, as were all laboratory tests. Roentgenograms of her skull showed no pathologic condition.

While the ears were being examined it was discovered that there was, on the left side, a very small area on the upper posterior quadrant of the external canal just lateral to the drum which when touched would reproduce the typical tic-like pain of which the patient complained. A small bit of wax was adherent at this spot, and when this was removed very slight bleeding was produced. Cocainization of this bleeding area entirely relieved the pain as long as the effects of the cocaine were present, and during this time touching this spot did not reproduce the pain. As soon as the effects of the cocaine had subsided, however, the tic-like pain could be produced at will by stimulation of this small area of skin. Since the patient was entirely incapacitated by this pain surgery was decided on, and she was told that the only certain method of differentiating between glossopharyngeal neuralgia and geniculate neuralgia was to operate under local anesthesia and have her complete cooperation. It was also explained that it might be necessary to sacrifice a part of the eighth and the motor root of the seventh nerve in order to relieve the pain, and to all of this she willingly agreed.

On Nov. 21, 1941, under local anesthesia, the usual unilateral cerebellar exposure was made on the left side. The bone over the left cerebellar hemisphere was removed, exposure of the lateral sinus being made above, going almost to the foramen magnum medially and extending as far laterally as the mastoid would permit. As soon as the removal of bone was sufficient, a small nick was made in the dura near the median line and the cisterna magna punctured to reduce the pressure. A small horseshoe shaped dural flap was reflected with the base toward the mastoid, and the left cerebellar hemisphere was gently retracted toward the midline after its surface had been protected with hot cotton. A retractor was then slipped in and the cerebellopontine angle was exposed.

The ninth nerve was tested first. When this nerve was touched the patient complained of severe pain in her throat with some radiation to the ear, but she said that it was not the typical tic pain. This procedure was repeated four times, and on three occasions she had pain only in the throat with no radiation to the ear; she was positive that it was not at all similar to the pain which she usually had. The bundle of nerves entering the internal auditory meatus was then touched. Immediately she complained of a severe pain in her ear which was identical in all respects to the pain that she had had previously. The eighth nerve was then picked up with a blunt hook, its cephalic half being touched first. Immediately the patient complained of extreme dizziness and said that the table was turning round. She became nauseated, so the nerve was released. A second attempt was made, and this time the caudal

Fig. 4.—When patient is smiling the facial innervation is practically equal. The photographs reproduced here and in figure 3 were made on the tenth postoperative day.

half of the nerve was picked up, causing the patient to complain of roaring in her ear, but there was no associated dizziness or nausea. In order to expose the nervus intermedius I had planned to split the eighth nerve in the direction of its fibers, as suggested by McKenzie,[7] but I found that I was able to

6. Costen, J. B.: A Syndrome of Ear and Sinus Symptoms Dependent upon Disturbed Function of the Temporomandibular Joint, Ann. Otol., Rhin. & Laryng. **43**: 1 (March) 1934.

7. McKenzie, K. G.: Intracranial Division of the Vestibular Portion of the Auditory Nerve for Ménière's Disease, Canad. M. A. J. **34**: 369 (April) 1936.

separate the seventh and eighth nerves by gently elevating the eighth nerve on a blunt hook, and by careful dissection I was able to separate the nervus intermedius from the facial nerve proper anteriorly and the eighth nerve posteriorly. When the nervus intermedius was touched the patient complained bitterly of the pain in her ear. After the motor root of the facial and the eight nerves had been carefully separated, the nervus intermedius was picked up with a blunt hook and was sectioned with a scalpel (fig. 1). When this was done she cried out with pain, but the pain subsided immediately. The anesthetist was then instructed to touch the patient's external auditory canal with a cotton swab, running it in as far as the drum. The patient did not complain of any pain whatever. The cerebellum was then allowed to sink back into its normal position, the dural flap was completely resutured and the usual closure of the muscles, galea and skin with interrupted sutures of silk was carried out. At the end of the operation the patient had absolutely no evidence of weakness of the facial muscles on the left side and, so far as we could tell, her hearing was intact. Except for some intermittent vomiting for the first forty-eight hours, her postoperative course was entirely satisfactory.

Immediately after operation there was coarse nystagmus when she looked to the left. This persisted for about four days and then cleared up. There was at no time any sign of lacrimal deficiency.

On Nov. 24, 1941 tests for taste sensation revealed the following: Over the anterior two thirds of the tongue on the left side taste for salt, bitter and sweet was absent. Over all the rest of the tongue it was quickly and accurately perceived. Sensation to touch, pain and temperature was everywhere normal.

Salivary Secretion (By Weight—Five Minute Period)

	Right (Normal) Submaxillary and Sublingual, Gm.	Left Submaxillary and Sublingual, Gm.
December 3	0.805	0.185
December 17	0.115	0.045
	Right Normal Parotid	Left Parotid
December 17	0.480	0.400

Repeated sensory examinations by many observers failed to show any sensory deficit over the face, mouth, pharynx, tongue or any part of the external ear. Testing sensation in the auditory canal is a difficult task, but even at the site of the former trigger zone sensation was present but the pain was no longer produced by stimulation of this area.

November 29 examination by the otolaryngologists failed to show any definite sensory loss, though the drum on the left was much less sensitive than on the right. The sensitivity of the left drum was believed to be much less than in a normal person.

Audiometer tests on Dec. 2, 1941 showed the hearing to be equal on the two sides (fig. 2). There was a loss of about 10 decibels in all tones of the conversational range and of about 20 decibels for the higher tones, but this was present in both ears, so there was no loss attributable to the operation.

Tests of salivary function were made by Dr. D. White of the dental department on Dec. 3, 1941 with the method described by Reichert and Poth.[8] The amount of saliva from the right and left sublingual and submaxillary glands was collected for a period of five minutes. From the right or normal side 0.805 Gm. was produced. From the left side only 0.185 Gm. was collected (shown in the accompanying table).

On December 3 the department of ophthalmology carried out the Schirmer test for lacrimal secretion. In the right eye the measurement was 17 and in the left eye 16, so there was no appreciable decrease. Clinically a tendency to dryness of the left eye was not noted at any time.

The patient was discharged on the twelfth postoperative day. She was walking without any difficulty, the wound was well healed and there had been no recurrence of the pain. Innervation of the face was excellent (figs. 3 and 4). The only evidence of facial weakness was a slight decrease in blinking which appeared on the eighth postoperative day.

December 17 the patient reported for a check-up. She was entirely free of the pain in her ear. There was not the slightest evidence of weakness of the muscles of the left side of the face, and sensory examination of the face, ear or superficial portion of the external auditory canal revealed no sensory loss. Careful sensory examination of the deeper portion of the auditory canal and the tympanic membrane on the left side by Dr. J. B. Costen revealed a definite diminution in sensation to pinprick and to heat but no anesthesia. The former trigger area was not anesthetic, but touching it did not produce pain.

Tests of salivary secretion were repeated by Dr. White. From the right or normal submaxillary and sublingual glands 0.115 Gm. of saliva was produced in five minutes, while from the left side only 0.045 Gm. was produced. From the right or normal parotid 0.48 Gm. was collected and from the left 0.4 Gm. (shown in the accompanying table).

Tests of lacrimal function were repeated by the department of ophthalmology with the same results as before, namely no diminution in tear secretion on the left side. Both lacrimal glands secreted at a rate higher than normal, but this was approximately equal on the two sides.

COMMENT

Objections will be raised to such an early report of this case, for obviously one cannot be sure but that a recurrence may take place. In my opinion, however, an early report is justified, for in the first place this case, together with the case of Clark and Taylor,[2] proves that "tic douloureux" of the nervus intermedius exists and may be cured by section of that nerve. Moreover, for the first time section of the nervus intermedius has been done without injury to the facial nerve or to the acoustic nerve. The final decision as to the nerve responsible for tic-like pain in the ear must be made by stimulation of the glossopharyngeal nerve and the nervus intermedius at operation. This, of course, makes it necessary that no anesthesia except local be used, for the cooperation of the patient is essential.

Second, an unusual opportunity is presented for study of the various functions of the nervus intermedius. The commonly accepted teachings are well summarized by Bing and Haymaker[9] as follows:

1. Fibers which stimulate tear secretion. In this case, no disturbance in lacrimation has been noted, so further studies are necessary.

2. Fibers which stimulate salivary secretion going to the submaxillary and sublingual glands. This function is borne out remarkably in this case, but further studies of the parotid and possible recovery of function by the submaxillary and sublingual glands are in progress.

3. Fibers transmitting taste from the anterior two thirds of the tongue. This function, also, is adequately proved.

The problem of the sensory field of the nervus intermedius is not definitely worked out in this case, nor was it in the case of Clark and Taylor.[2] Certainly there is no gross anesthesia of any part of the external ear nor, so far as I can determine, of the superficial portion of the external auditory canal. That the tympanic membrane and adjacent parts of the deep canal are less sensitive on the sectioned side seems definite, but here again observations over a prolonged period are necessary and will be made.

8. Reichert, F. L., and Poth, E. J.: Pathways for the Secretory Fibers of the Salivary Glands in Man, Proc. Soc. Exper. Biol. & Med. **30**: 973 (April) 1932-1933.

9. Bing, Robert, and Haymaker, Webb: Compendium of Regional Diagnosis in Lesions of the Brain and Spinal Cord, ed. 11, St. Louis, C. V. Mosby Company, 1940, pp. 153-155.

SUMMARY

1. Tic douloureux of the nervus intermedius is a definite clinical entity but one rarely observed.

2. Tic-like pain deep in the ear may be due to disorders of either the nervus intermedius or the glossopharyngeal nerve, and the decision as to the nerve involved can be made only at operation. This necessitates the use of local anesthesia so that stimulation of the nerves may be done.

3. The nervus intermedius may be sectioned without injuring the main trunks of the seventh or eighth nerve.

4. Accepted teachings as to salivary and taste functions of the nervus intermedius are borne out in this case.

5. Teachings as to lacrimal function are not substantiated, and further studies are necessary.

6. The sensory field is evidently very small, for in this case only hypesthesia of the tympanic membrane and adjacent portions of the external auditory canal has been produced.

University Club Building.

Clinical Notes, Suggestions and New Instruments

SALMONELLA SUIPESTIFER INFECTION OF URINARY TRACT

W. CAREY HENDERSON, M.D., NASSAWADOX, VA.

J. L. T., a white man aged 49, was admitted to the Northampton-Accomack Memorial Hospital for treatment of an infection of the urinary tract. He had been a patient in the same hospital two years previously, at which time he had a resection of the anus and the sigmoid colon for a constricting lesion. During his first admission he had had numerous catheterizations and for a time carried an indwelling catheter. He had excellent control of the colostomy.

During the summer of 1941 he had mild urinary symptoms, such as slight burning, occasional fever and fatigue. He was active, however, and did not consider the symptoms of sufficient severity for him to go to bed for treatment. Trial of various urinary antiseptics, forcing of fluids and changes in reaction of the urine had little effect on the amount of pus and blood present. This would vary from 30 to 100 pus cells per high power field of centrifuged urine. The number of red cells present varied from 0 to 10.

He was admitted to the hospital Dec. 3, 1941. The general appearance was excellent. The weight was a little greater than that at the time of operation two years before. General examination showed him to be normal except for the colostomy, which functioned perfectly. Catheterization showed no stricture, but there was a 2 ounce (60 cc.) residue of urine, which contained many pus cells, free and in clumps, many bacteria and a few red cells. The white cell count of the blood was 10,500, with 76 per cent polymorphonuclear leukocytes. Remaining blood determinations gave entirely normal results. Roentgenograms did not show stones in the urinary tract. Culture of the urine showed Salmonella suipestifer, whose identity was proved by the agglutination test.

Treatment was given with sulfadiazine, 1 Gm. every four hours for two doses, then 0.5 Gm. every four hours for five days and 0.5 Gm. every six hours for three days. The fluid intake was moderately increased.

On the third day of treatment the number of pus cells in the urine was reduced to 8 per high power field, and on the eighth day there was neither pus nor blood in the urine. The patient was then discharged without medication. He was seen three weeks later entirely free from symptoms and from pus in the urine.

The source of the infection was not known. The patient was a farmer and raised chickens but did not raise hogs.

A METHOD FOR THE SIMULTANEOUS ASPIRATION OF THE CONTENTS OF THE STOMACH AND THE FIRST PART OF THE DUODENUM

J. EDWARD BERK, M.D., M.Sc. (Med.); MARTIN E. REHFUSS, M.D., AND J. EARL THOMAS, M.D., PHILADELPHIA

The difficulty of maintaining a tube in situ in the duodenal bulb can be appreciated only by those who have insisted on fluoroscopic control in every instance. The irritability of this part of the duodenum is such that after varying intervals the tip of an ordinary tube is displaced either forward or backward. None of the methods hitherto used to study the contents of the duodenal bulb [1] overcome this difficulty and still permit a free flow of stomach contents into the duodenum. Furthermore, it is sometimes desirable to be able to make simultaneous extractions from the stomach and duodenal bulb in order that the contents of these contiguous parts may be compared. We have been able to find records of only one investigation [2] utilizing a procedure which made this possible. The observations reported, however, were incomplete in that they were limited for the most part to single specimens withdrawn one hour after the ingestion of the test meal.

The method to be described was devised to supply a more satisfactory means of studying simultaneously the contents of

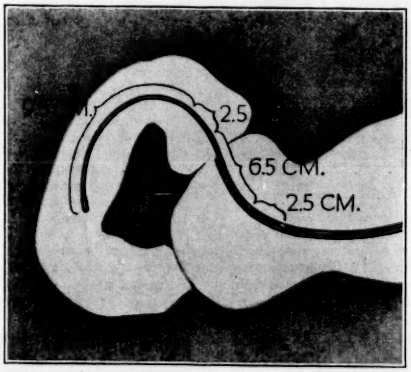

Fig. 1.—Relative positions and distances between tip, markers and perforations of gastroduodenal tube.

the stomach and of the duodenal bulb. The arrangement adopted largely meets the objections raised to previous procedures. It permits not only the successful intubation of the first part of the duodenum but also keeping the tube in place throughout the period of observation following a test meal.

METHOD

A soft rubber, double lumen tube was constructed [3] with separate gastric and duodenal components modified from the type

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From the Departments of Medicine and Physiology of the Jefferson Medical College of Philadelphia.

This is a portion of the thesis submitted by Dr. Berk to the Faculty of the Graduate School of Medicine of the University of Pennsylvania in partial fulfilment of the requirement for the Degree of Doctor of Medical Science for graduate work in internal medicine.

1. Einhorn, Max: A Simultaneous Gastroduodenal Aspirator: Contributions to Medical and Biological Research, New York, Paul B. Hoeber, Inc., **1**: 458, 1919. Eyerly, J. B.: Comparative *ph* Values Within the Stomach, Pylorus and Duodenum in Antacid Therapy, Am. J. Digest. Dis. **7**: 431 (Oct.) 1940. Morton.[3]

2. Morton, C. B.: Observations on Peptic Ulcer: VI. Preliminary Report of Clinical Experiments with Gastroduodenal Analysis, Am. J. M. Sc. **177**: 65 (Jan.) 1929; Observations on Peptic Ulcer, South. Surg. **3**: 316 (Dec.) 1934.

3. Made by the Davol Rubber Company, Providence, R. I. The cost of the tube was defrayed by a grant from the Golden Slipper Square Club.

of tube used by Diamond and others in the study of pancreatic secretion.[4] A small, solid, stainless steel, nonperforated, bullet-shaped tip measuring 1.2 by 0.6 cm. was inserted into the free end of the single channel duodenal portion of the tube. Nine and five-tenths cm. (3¾ inches) proximal to the tip the duodenal limb was perforated over an area 2.5 cm. in length. Six and five-tenths cm. (2½ inches) orad to the most proximal duodenal perforation the gastric limb was similarly perforated over an area 2.5 cm. in length. Radiopaque bands of stainless steel were placed immediately above and below both lengths of perforations. The relative positions of the tip, markers and perforations are shown in diagram form in figure 1.

Fig. 2.—Apparatus used, showing the method of simultaneous collection of samples from the stomach and the first part of the duodenum.

The subject following a twelve hour fast was seated and the tube introduced through the mouth. When approximately 45 cm. of the tube had been swallowed the subject was placed before a vertical fluoroscope and the tube swallowed further until the metal tip was seen to point headward after sliding along the greater curvature of the stomach. In a few cases manipulation in this position so that the greater curvature and the tube were carried upward by the examiner's left hand at the same time that a stroking movement of the stomach toward the pylorus was applied with the examiner's right hand succeeded in getting the tube to enter the duodenum. In most instances the subject was next placed on the right side on a table adjacent to the fluoroscope and an additional 20 cm. of tube slowly swallowed during a period of twenty to thirty minutes, after the manner usually employed in duodenal intubation. At the end of this time the position of the tube was again determined fluoroscopically. In a few instances it was found to have coiled on itself in the stomach and, therefore, had to be withdrawn and reswallowed. Including the instances of reswallowing, more than 95 per cent of the efforts to intubate the duodenum were successful.

The duodenal openings were assumed to be within the first part of the duodenum when the distal duodenal marker, as observed fluoroscopically, was about 0.5 cm. below the apex of the bend in the duodenal tube (fig. 3*B*, fig. 4*A*). When the tube was in this position the subject was returned to the table and placed again on the right side.

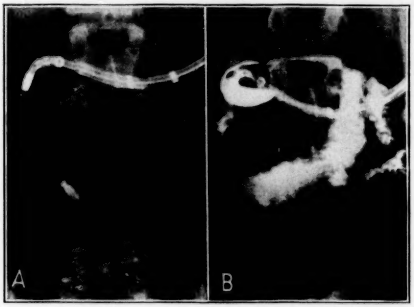

Fig. 4.—Normal duodenum: *A*, film taken at time of gastroduodenal analysis showing position of tube. *B*, film taken after injection of barium sulfate through the duodenal portion of the tube. Note outline of duodenal cap, in which duodenal markers may be seen.

The tubes leading from the gastric and duodenal components were connected through separate Erlenmeyer flasks with a water suction bottle placed at such a height as to maintain a constant suction of 110 mm. of mercury. A picture of the apparatus employed is shown in figure 2.

The position of the tube was checked fluoroscopically at frequent intervals.

Any change in its position was corrected at these times.

At the completion of the experiment the subject walked to the x-ray department (a walk of about 20 yards plus an elevator ride of six floors). Here the position of the tube was again ascertained fluoroscopically with the subject erect. In a small number of instances it had either regurgitated into the stomach or had moved farther into the duodenum. In the majority of instances, however, it was found unchanged in the position it had occupied throughout the test period.

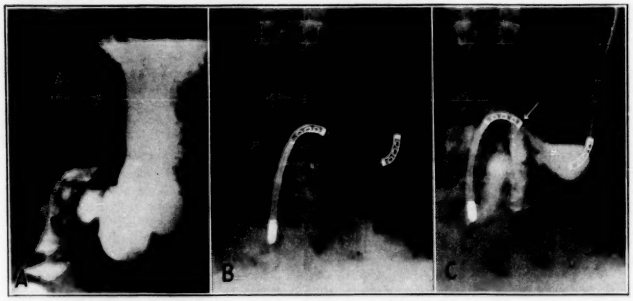

Fig. 3.—Duodenal ulcer: *A*, film taken in erect position at the time of barium sulfate meal study showing deformed duodenal cap with pseudodiverticulum formation. *B*, film taken at time of gastroduodenal analysis showing position of tube. Note position of tip, markers and perforations. *C*, film taken after injection of barium sulfate through the duodenal portion of the tube. Arrow indicates relationship of proximal duodenal marker to base of cap.

A roentgenogram was taken to show the position of the tube during the test (fig. 3*B*, fig. 4*A*). Barium sulfate was then injected through the duodenal portion of the tube and an attempt made to outline the base of the duodenal cap. Another roentgenogram was then taken (fig. 3*C*, fig. 4*B*). A roentgenologist (Dr. Melvin A. Dillman) examined all the films, comparing them with the film taken in the erect position in a previous gastrointestinal roentgen study (fig. 3*A*) and localizing the duodenal markers with respect to the base of the duodenal

4. Ågren, Gunnar, and Lagerlöf, Henrik: The Pancreatic Secretion in Man After Intravenous Administration of Secretion, Acta. med. [Footnote 4 continued on next page]

cap. In this way proof was obtained as to whether or not the duodenal openings were actually within the first part of the duodenum.

COMMENT

The success of this method depends on the fact that anchorage of the tube is secured by having the small solid tip pass well into the second portion of the duodenum, where, in most persons, it remains steadfast. It is by no means uncommon, however, for the tip to move on, even though the tube is fixed at the mouth. Occasionally the tip and the tube may be regurgitated into the stomach, particularly if the subject should become nauseated. For these reasons, repeated fluoroscopic observations are essential.

We were obliged to utilize a vertical fluoroscope, but the use of a horizontal fluoroscope on which the subject could be placed and remain undisturbed throughout the entire test period would be desirable.

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ELECTROMYOGRAMS IN DIAGNOSIS AND PROGNOSIS OF TETANUS

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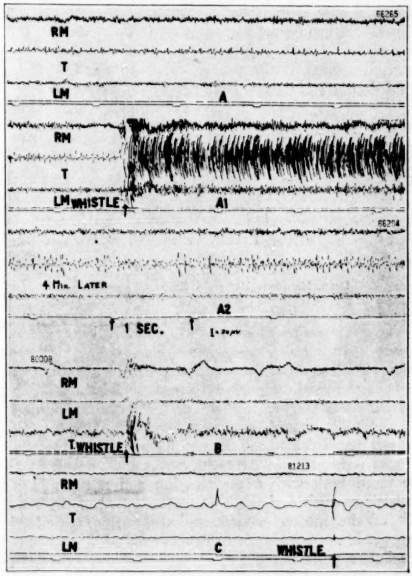
In the absence of trauma the diagnosis of tetanus is easily overlooked, and even in the presence of an infected wound and obvious lockjaw the bacteriologic studies may be negative. Tetanus toxin is known to act on the skeletal muscle, causing contracture as a characteristic manifestation.[1] In local tetanus produced experimentally the action potentials of affected muscles have been shown to present constant activity with diphasic spikes.[2] This abnormal electrical activity is a specific effect induced by tetanus toxin and when demonstrated should be of diagnostic value. Consequently, in a case of suspected tetanus of obscure origin, electromyograms were taken from the affected muscles and a test devised to quantitate the abnormality present for the purpose of prognosis and to aid in following the course of progress.

REPORT OF CASE

History.—A man aged 21 entered the Massachusetts Eye and Ear Infirmary Jan. 28, 1941 because of a discharging ear of two years' duration, with an acute exacerbation for two weeks. Diagnoses were made of mastoiditis, cholesteatoma and Bezold's abscess and a radical mastoidectomy was done the following day, with removal of the cholesteatoma and pus. No bacteriologic studies were done at this time. On the fifth postoperative day the patient complained of a stiff neck on the right side and some difficulty in opening the jaws, which persisted in spite of local heat and massage. Roentgen examination of the cervical spine and temporomandibular joints was negative, as were the determinations of blood levels for phosphorus, phosphatase, chloride and carbon dioxide combining power. He was thought to have a muscular strain of the trapezius muscle and possible arthritis of the temporomandibular joints and was referred to the physical therapy department for treatment. There the diagnosis of tetanus was suspected, as he had trismus, contracture of the right trapezius muscle, hyperactive tendon reflexes and rigidity of the spinal muscles. Electromyograms were taken which confirmed the diagnosis, and treatment was started on the advice of a surgical consultant. A total of 100,000 units of tetanus antitoxin was given parenterally within six hours. During the next three weeks there was gradual improvement of the trismus and torticollis, which was quantitatively shown by the electromyograms. He was then discharged with a clean mastoid wound. Two cultures taken from the draining wound before antitetanic treatment was started were negative for Clostridium tetani. Two months later he returned for plastic closure and clinically showed no evidence of tetanus at this time. Electromyographic studies also were negative.

Electromyographic Tests.—Electromyographic tracings [3] were obtained from the right trapezius and both masseter muscles with an ink-writing three-channel Grass electroencephalomyographic machine with bipolar surface electrodes. After maximum relaxation was secured recordings showed continuous electrical activity from all leads (*A* in the tracing), in contrast to normal muscle at rest, which shows no action potentials (*C*). To test for the presence of generalized tetanus, the effect of an external stimulus on the degree of spasm was determined by blowing a whistle near the patient. This



Electromyograms in tetanus: *A*, *A* 1 and *A* 2, tracings before treatment. *A*, continuous electrical activity in affected muscle with maximum relaxation. *A* 1, decided increase in voltage after whistle is blown near patient. *A* 2, slight increase in voltage persisting four minutes later. *B*, sixteen days later, moderate discharge at rest only slightly increased by whistle. *C*, three months later, no electrical activity at rest or after whistle as in any normal muscle at rest or after whistle. Time intervals and calibrations are the same in all tracings. *R M* indicates right masseter; *L M*, left masseter, and *T*, right trapezius.

definitely increased the voltage of the action potentials, although no change was observed clinically (*A* 1). This increased activity persisted for four and a half minutes before the activity returned to the previous level (*A* 2). The test was repeated sixteen days later, at which time the trismus and torticollis had diminished. At this time the whistle produced no increase in the electrical activity but at rest there was persistent spontaneous discharge, presumably due to persistent local tetanus (*B*). Two months later the electromyograms were normal at rest and were uninfluenced by the whistle (*C*). Voluntary movements produced the normal burst of diphasic spikes.

Scandinav. **90**: 1, 1936. Comfort, M. W.: Tests of Pancreatic Function, J. A. M. A. **115**: 2044 (Dec. 14) 1940. Comfort, M. W., and Osterberg, A. E.: Pancreatic Secretion in Man After Stimulation with Secretion and Acetylbetamethylcholine Chloride, Arch. Int. Med. **66**: 688 (Sept.) 1940. Diamond, J. S.; Siegel, S. A.; Gall, M. B., and Karlen, S. H.: The Use of Secretin as a Clinical Test of Pancreatic Function, Am. J. Digest. Dis. **6**: 366 (Aug.) 1939.

From the Department of Physical Therapy, Massachusetts General Hospital, Boston.

1. Ranson, S. W.: Local Tetanus: A Study of Muscle Tonus and Contracture, Arch. Neurol. & Psychiat. **20**: 663-701 (Oct.) 1928.

2. Harvey, A. M.: The Peripheral Action of Tetanus Toxin, J. Physiol. **96**: 348-365 (Aug. 14) 1939.

3. Dr. Robert S. Schwab, director of the Brain Wave Laboratory, cooperated in obtaining the electromyograms.

COMMENT

The appearance of tetanus after an otherwise uncomplicated mastoidectomy is of interest because of its rare occurrence.[4] Tetanus was not suspected and consequently the diagnosis was not made for more than a week. Bacteriologic studies were not helpful, the only specific evidence of tetanus toxin being the presence of muscle contracture and the abnormal electromyograms. An increase of electrical activity following the whistle suggests that the central nervous system was affected as well as the muscles locally, indicating a more serious prognosis. The voltage of this abnormal electrical activity and the response to an external stimulus gave an objective quantitative index of the extent of local and general action of the toxin and a sensitive guide as to progress. The diagnosis of tetanus in the average case can readily be made on clinical grounds alone, but the electromyograms may prove of value in an obscure case, as in this instance. Although action potentials have been recorded from experimental tetanus, we have not found a previous report of the electromyograms from a patient with this disease.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ARTICLE. HOWARD A. CARTER, Secretary.

THE RESPONSIBILITY OF MEDICAL SCHOOLS TO TEACH PHYSICAL THERAPY

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MILWAUKEE

The administrators of medical schools have a tremendous responsibility during these times of World War II. They now face an accelerated program to shorten the medical course from four to three years and demands for hours allocated for certain additional courses. These problems are presented in the face of an overcrowded medical curriculum which includes the present four years of educating medical students. We are faced both with a reevaluation and a reemphasis on basic essentials of teaching methods and of the content of the medical courses. During this period of stress it is not my desire to propose an additional burden but to point out the great need that our graduates have, who were yesterday our students, for practical instruction in the indications and contraindications of physical therapeutic methods.

Notwithstanding the venerable age of physical therapy and its many worthy uses, it gradually fell into disrepute, and at the time of our entry into World War I practically no instruction in this subject was given in any of the medical schools. One reason for this was its wide exploitation by quacks and charlatans, which caused conservative physicians to look on it with distrust. Others, overenthusiastic, made unwarranted and exaggerated statements as to its value, which further alienated members of the medical profession.

During World War I in 1917 and 1918 the urgent need of returning the wounded rapidly to the front lines or of rehabilitating them sufficiently for noncombatant duty brought about what might be termed the rebirth of physical therapy. The Surgeon General definitely amalgamated all the methods of physical therapy when he defined it as "physical measures such as are employed under physical therapy, including hydrotherapy, electrotherapy, mechanotherapy, active exercise, indoor and outdoor games, and passive exercise in the form of massage." Physical therapy thus became a definite entity with well defined branches.

For the vast work of convalescence and reconstruction it was necessary to secure trained personnel. Medical personnel, commissioned and enlisted, was hastily trained, all available physicians who had had experience in any of these branches being utilized. Reconstruction aides in physical therapy were appointed. These were not all nurses but were a group of young women who were well trained in their occupation and who, by their splendid work, insured the success of the newborn specialty. They either were graduates of normal schools of physical education or were college graduates who had majored in physical education; in addition, before being accepted in the Army they were given six weeks' intensive training in physical therapy.

Physical therapy as part of the practice of medicine has made considerable advance during the last twenty years. Systemic instruction in undergraduate and postgraduate schools, critical research in adequately equipped institutions and authoritative information issued periodically by the Council on Physical Therapy are gradually replacing objectionable propagandizing methods employed by commercial concerns. Yet in many parts of the country the profession as a whole does not evaluate properly the possibilities and limitations of physical measures. As a result there occur many errors of commission, such as the overenthusiastic and unwarranted uses of physical therapy procedures, and also errors of omission; for example, the exploitation of valuable measures by irregulars and lay persons instead of by qualified physicians.

Leading manufacturers in conference with physical therapy committees have subscribed to the principle that instruction in diagnosis and therapeutics belongs solely to the province of the medical profession. The only instruction that an ethical manufacturer can consistently offer to the profession is on the manipulation and care of some certain type of apparatus.

The maintenance of acceptable standards in compensation work may also receive attention. In some of the larger centers low grade industrial clinics and unscrupulous physicians have attempted to turn the wholesale use of physical measures into mere sources of revenue. The medical profession must be informed that in traumatic and other cases physical measures are to be employed only (1) after a complete diagnosis has been established, (2) when the existing pathologic or functional changes serve as an indication for physical therapy and (3) when physical therapy is applied efficiently on the basis of a definite prescription and is continued no longer than it is really indicated. On the basis of these principles, cooperation with insurance carriers may be established and opportunities for good work by qualified and ethical physicians developed.

Well informed members of the medical profession have come to realize that physical therapy measures belong to the therapeutic armamentarium of the educated physician; that their efficiency, when applied in suitable cases with the proper technic, has been definitely established. It behooves leaders of medicine in states and counties to safeguard the interests of public

4. Bishop, J. M.; Du Bose, R. H., and Hamlin, F. E.: Otogenous Tetanus, J. A. M. A. **98**: 1546-1548 (April 30) 1932.

health and of the medical profession by encouraging or actively promoting educational work which will lead to a more widespread and more rational use of physical therapy by the medical profession in general.

There is a growing consciousness on the part of the medical profession regarding this great value of physical therapy. This new outlook has been aided by the activities of the Council on Physical Therapy of the American Medical Association and its publications of conservative articles on this subject. These articles have been collected and published in the Handbook of Physical Therapy, the third edition of which appeared in 1939.

The Council on Medical Education and Hospitals of the American Medical Association has cooperated with the Council on Physical Therapy to advance the teaching of physical therapy to medical students. It is the duty of every medical school to teach the principles and application of medicine, surgery and physical therapy so that the medical profession may use all these measures to the best advantage. The foundation of this instruction is the proper teaching of the medical student.

Motion pictures may be obtained, free of charge, on application to the Bureau on Exhibits of the American Medical Association, but because they are in great demand requests should be made for their use at least two months in advance. These pictures illustrate:

1. Effects of Heat and Cold.
2. Effects of Massage.
3. Technic of Massage.
4. Aids in Muscle Training.
5. Underwater Therapy.
6. Occupational Therapy.

The value of physical therapy in internal medicine was stressed by Piersol [1] as follows:

It may be stated with little fear of contradiction that there is no field of therapeutics less understood and less frequently employed by internists than physical therapy. There are several reasons that account for this unfortunate state of affairs which has its inception in our medical schools. A survey of the curriculums of undergraduate as well as graduate medical courses reveals the fact that, if taught at all, but little time is devoted to the various aspects of physical therapy and that at best the courses available to students of medicine are inadequate and superficial. The average physician, therefore, approaches the practice of medicine knowing little about one of the oldest and most useful branches of therapeutics. Physicians, as a rule, because of their lack of understanding, evince little interest in acquiring a sound working knowledge of physical therapy. Furthermore, the proper application of physical therapeutic methods requires not only time but a certain amount of manual dexterity. Since physicians have been loath to give of the former or to acquire the latter, the field of physical therapy has been neglected by the medical profession.

Hubbard has said "A man is usually down on that which he is not up on."

If physical therapy is to remain under the control of physicians and advance as it should along sound scientific lines, the indifference which the internists as a group have displayed in the past must give way to an active interest in developing a constructive, forward looking policy to improve the practice of and extend education in physical therapy.

1. Piersol, George M.: The Value of Physical Therapy in Internal Medicine, J. A. M. A. **117**: 1835 (Nov. 29) 1941.

Mock, Coulter, Pemberton and Krusen have repeatedly stressed simple therapeutic measures for home treatment which should be as definite as for drug therapy.

Mimeographed instruction sheets may be used for this purpose, and the Council on Physical Therapy will send, on request, samples of instruction sheets that may be used. In the present emergency the National Research Council has appointed a subcommittee on physical therapy to cooperate with and to advise the Surgeon Generals of the Army and Navy, the Veterans Administration and the Public Health Service in the use of physical therapy in government hospitals.

As an example of the need of instruction in physical therapy on the part of general practitioners, I may cite the demand for instruction manifested during the last two years at the exhibit on low back pain under the direction of Dr. Frank Ober at the annual meetings of the American Medical Association. A faculty of over fifty demonstrators has exemplified the methods of physical examination of the peripheral nerves and muscles, bones and joint range of motion, as well as simple physical therapeutic procedures of heat, massage, exercise, and passive and active motion. The doctor wants this knowledge because of the demands on the part of the public for this agency of relief and the neglect on the part of medical schools to emphasize this modality of treatment to its medical students.

This neglect is manifested in the fact that the most difficult course for the medical administrative officer to organize is the one on physical therapy. Dr. Piersol states that you may comb a great metropolitan center and still find little (organized) material to give students a constructive course along this line. As a nation, faulty posture is one of our outstanding shortcomings noted in draftees. Among those nations in which mass exercise has been in vogue for many years, youths have acquired good posture and are better prepared for military services. He also emphasizes that physical therapy, including those procedures used in heart disease, are adjuncts. Physical therapeutic aids will tend to shorten convalescence and increase the well-being of patients not only physically but also psychologically.

Our duty to medical students and the medical profession will not be fulfilled until each medical school formulates a teaching program in physical therapy. We owe this duty likewise to the public, because physical therapy is part of the art of healing.

The individual patient expects his doctor to relieve pain and suffering and to be a healer of the ills of the human body. The ethical methods of diagnosis and therapy employed by the physician do not concern the patient as long as relief is given. It is probably this relief to the patient which has been lacking in certain forms of diseases that has led to the rise of cults and quacks in reference to treatment of derangements of the locomotor apparatus. More original research is needed in this field, but in spite of our lack of knowledge there is still ample evidence of the relief given to man by the use of physical agents. It is the duty of every administrative officer of a curriculum to see that the medical student has an opportunity to learn what is already known in this important field of physical therapy. The present national emergency is a challenge to each of us to see that physical therapy is no longer neglected in our medical curriculum for undergraduate medical students.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 16, 1942

PHYSICIANS NEEDED IMMEDIATELY FOR THE ARMED FORCES

Under the heading of Medicine and the War in this issue of THE JOURNAL appears an official statement by General Hershey, director of the Selective Service System, relative to the recruitment of physicians for the United States Army Medical Corps. This statement, addressed to the state directors of the Selective Service System, discusses the new plan, already described in THE JOURNAL, whereby teams for the recruitment of physicians are established in the various states. Following a meeting in Omaha on May 8 the plan was extended also to all states west of the Mississippi River. In each state representatives of the Office of the Surgeon General of the Army, of the Adjutant General's Office and the state representative of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians will function as a team for the recruitment of physicians. They have authority to issue commissions in the grades of lieutenant and captain, immediately following physical examination. This step has been necessary because of the shortage now prevailing of five thousand physicians for the U. S. Army Medical Corps. No doubt physicians in more than adequate numbers will respond.

Never has there been any question of the patriotism of the medical profession! Any delay that has occurred up to now in enrolment has been associated with the desire of every physician to serve in the capacity for which he is best suited. The various technics that have been developed for making such determination have apparently resulted in some delay by physicians in making themselves available prior to receipt of the enrolment form and questionnaire now in the hands of every physician. Already many thousands of these enrolment forms have been received in the office of the National Roster. The names of physicians who select Army as first choice will no doubt soon be supplied to the state recruitment teams; they may then call on such physicians for immediate action. However, physicians must not wait for such call; they are needed now. They may apply for immediate commissioning to the state representatives of the Procurement and Assignment Service.

The circular issued by General Hershey calls particularly to the attention of the local boards of the Selective Service System the type of consideration to be given to claims by physicians for deferment because of dependency. Physicians who are commissioned as officers will, of course, have much more difficulty in sustaining a claim based on dependency than would those who are enlisted in ranks below that of lieutenant or captain.

As experience has developed, it becomes more and more apparent that many of the difficult problems associated with the recruitment of physicians are being solved. By a decision now prevailing, physicians who are not citizens may enlist in the United States Army and after three months of service may be made citizens. If the situation concerns a physician from abroad who is licensed to practice in one of the states, he may become a citizen by enlisting in the United States Army and after a period of three months may become a citizen and apply for a commission.

Today the situation is much more complicated than in the times of previous wars. A system of extended residencies and assistantships associated with qualification for the certificates of the boards in the various specialties now covers many young graduates in medicine. Especially needed at this time as a means of encouragement to such young men in offering their services to the armed forces is a definite action on the part of each one of the certifying boards indicating the extent to which it will accept military service as a part of the requirement for certification in a specialty of medical practice.

A meeting of the Committee on Medical Preparedness of the American Medical Association was held in Chicago on May 9. The Committee on Medical Preparedness considered many of the problems which now confront the medical profession in relation to an adequate supply of medical officers for the armed forces. The headquarters of the American Medical Association is giving its fullest cooperation to the Surgeon Generals and to the Office of Procurement and Assignment. The American medical profession has never failed in its response to the government of the United States when its members were needed in time of war.

HISTOPLASMOSIS

Stimulated by the statements of Manson and Ross that kala azar probably existed in America, Samuel T. Darling began the search for Leishman-Donovan bodies in smears from the spleen, liver and bone marrow in all cases of splenomegaly that were examined post mortem at Ancon Hospital, Canal Zone, Panama. In 1905 Darling [1] encountered a patient with splenomegaly, emaciation, irregular fever, leukemia and anemia. The essential pathologic features found post mortem on this patient were "the invasion of endothelial cells in the smaller lymph and blood vessels and capillaries by enormous numbers of a small encapsulated microorganism causing necrosis of the liver, with cirrhosis, splenomegaly, pseudogranulomas of the lungs, small and large intestines with ulceration of the latter, and necrosis of lymph nodes draining the infected viscera." The organism was round to oval and measured from 1 to 4 microns in diameter. After staining, the organism was seen to possess a refractile achromatic rim within which occurred a polymorphous chromatin nucleus, basophilic cytoplasm and achromatic spaces. The similarity to the Leishman-Donovan body of kala azar was striking. The organism differed, however, from the latter in the form and arrangement of its chromatin nucleus and in not possessing a blepharoplast. Darling regarded this as a protozoan parasite; he called it Histoplasma capsulatum and the disease produced by it histoplasmosis. Two additional cases were seen within the next nine months.

Reilly and Watson reported in 1926 from Minnesota the first case of histoplasmosis to be recorded in the United States. In 1928 Crumrine and Kessel reported a case from California. In 1934 Dodd and Tompkins [2] of Vanderbilt University School of Medicine reported a case occurring in a 6 month old infant born in Tennessee. Theirs was the sixth case to be recorded in literature and the first to be diagnosed during life. Tompkins found the yeastlike parasite within large mononuclear cells in films of the peripheral blood stained by supravital methods. At the necropsy, material was obtained from which Histoplasma capsulatum was successfully cultivated by DeMonbreun of the Department of Pathology of the same school. DeMonbreun [3] succeeded in cultivating the invading organism both in the yeastlike form as it appears in the lesions and as a mycelium. The pathogenic phase of the fungus is the yeastlike form. DeMonbreun further succeeded in reproducing the disease in 2 monkeys by intravenous injection of 5 cc. of a broth suspension of a three day culture from a blood agar slant. Three days before the animal died the parasites were found in large numbers within the mononuclear cells in smears of the peripheral blood. Necropsies revealed in each case enlargement of the spleen, liver and lymph nodes. Smears from these organisms and from the bone marrow showed enormous numbers of the intracellular parasites. The parasites were recovered in cultures of the tissues. The fungus thus complied with all of Koch's postulates and is therefore to be regarded as the etiologic agent in the 6 cases reported.

Meleney,[4] in a comprehensive review published in 1940, collected 19 reports of cases and 13 additional cases which have come to his attention but have not yet been reported. He calls attention to the fact that histoplasmosis or reticuloendothelial cytomycosis appears commonly as a systemic febrile disease similar to kala azar with a large liver and spleen, a septic temperature, anemia and leukopenia. In other cases lymph node enlargement may predominate simulating Hodgkin's disease, leukemia, lymphosarcoma or aplastic anemia. In still another group pulmonary symptoms may predominate, and infection is often complicated or superimposed on pulmonary or general tuberculosis. Pathologic alterations consist of an enlarged spleen and gray or white nodules in the lungs, liver, spleen, the intestine and the pulmonary and peritoneal surfaces. Henderson, Pinkerton and Moore [5] report a case of histoplasmosis in which the chief lesion was an ulcerative enteritis. A similar involvement was present in 8 of 25 carefully studied cases. Examination of stools in such cases may reveal the histoplasmas. The almost constant involvement of the mesenteric lymph nodes points, according to Henderson, to the gastrointestinal tract as the port of entry.

The parasites occur in various phagocytic cells as well as in the fixed reticuloendothelial cells of the liver and spleen. The site of predilection for the invasion by the yeastlike organism is the reticuloendothelial system. The bodies are found in the phagocytic cells in numbers of one to fifty. They may be found in thin smears of peripheral blood, by spleen, liver, lymph node or sternal puncture, and in biopsies from lymph nodes or cutaneous lesions.

Recently Humphrey [6] noted 5 cases of the disease in a limited area in Michigan. Within the year 1940, 9 cases occurred. Humphrey believes that the increase is actual and results from infection probably brought about by increased facilities for transport. The site of entry is uncertain; the skin has been suggested with possible bites or infestations by parasites as the mode of entry, but the port most commonly accepted is the

1. Darling, Samuel T.: A Protozoon General Infection Producing Pseudotubercles in the Lungs and Focal Necrosis in the Liver, Spleen and Lymph Nodes, J. A. M. A. **46:** 1283 (April 28) 1906.

2. Dodd, Katherine, and Tompkins, Edna H.: A Case of Histoplasmosis of Darling in an Infant, Am. J. Trop. Med. **14:** 127 (March) 1934.

3. DeMonbreun, W. A.: The Cultivation and Cultural Characteristics of Darling's Histoplasma Capsulatum, Am. J. Trop. Med. **14:** 93 (March) 1934.

4. Meleney, H. E.: Histoplasmosis (Reticuloendothelial Cytomycosis), Am. J. Trop. Med. **20:** 603 (July) 1940.

5. Henderson, R. G.; Pinkerton, Henry, and Moore, L. T.: Histoplasma Capsulatum as a Cause of Chronic Ulcerative Enteritis, J. A. M. A. **118:** 885 (March 14) 1942.

6. Humphrey, Arthur A.: Reticuloendothelial Cytomycosis, Arch. Int. Med. **65:** 902 (May) 1940.

lungs. They appear to be the site of the oldest and most dense involvement. Henderson believes that the gastrointestinal route is perhaps the site of entry, especially in cases showing ulcerative lesions in the alimentary tract with mesenteric lymphadenopathy. The disease so far has been invariably fatal. Meleney believes that antimony preparations, not only the inorganic salts but the trivalent preparations such as fuadin, and the pentavalent preparations such as neostam, should receive particular attention in therapy.

Current Comment

REORGANIZING BRITISH MEDICAL SERVICE

A discussion of "A National Medical Service and Conditions of Medical Practice After the War" by Sir Henry Brackenbury, M.D., in the *British Medical Journal* for January 24, probably the last article written before his death, forecasts some of the problems which will affect the practice of medicine in Great Britain after the war. An anticipated reduction of 3,540,000 in the population of England and Wales by 1965 means that some 4,500 fewer practitioners will be required by that date, assuming the present average "doctor power" to be satisfactory. A rise in the income limit for admission to national health insurance and the expected inclusion of dependents will bring some 80 to 85 per cent of the population under that system. The impoverishment by war taxation of the uninsured will still further restrict the scope of private practice. As a result of contemplated extension of the school medical service, "unless efforts, contrary to past experience, are successful, practitioners will lose contact with most children and young persons before their entry to the national health insurance system or even up to 18 years of age." In view of these facts "it is clear that opportunities for purely private practice—whether general, consultant or specialist—of a remunerative character are likely to be greatly curtailed and that all classes of practitioners must be prepared to accept some measure of contractual practice under the supervision of the Ministry of Health." It was Sir Henry's belief that the basis of any scheme of medical service would be the general practitioner and that it would be organized "on the general lines of the national health insurance scheme." This would not preclude, he thought, the widest reconsideration of the terms and conditions of service for practitioners or of the removal of many of the functions of the "approved societies" or even their abolition, or of changing the methods of financing the scheme. It does, however, "imply the continuance of at least four principles so far as the medical profession is concerned. These are (1) the right of any and every registered practitioner to take part in the service if he so choose, (2) the right of free choice between patient and doctor within reasonable territorial and numerical limits, (3) the position of the practitioner as an independent unit in the service not subject in his purely professional judgments to any lay authority or to any medical superior officer, (4) remuneration approximately proportional to the responsibility undertaken." Probably a number of services would be added to the present general practitioner service. "Such would be (1) a maternity and infant welfare service for expectant mothers, women during and shortly after childbirth, and infants up to 2 years of age, (2) a school medical service for children and young persons attending school full time, (3) a special diseases service, as for tuberculosis, venereal diseases, cancer and, possibly, rheumatism, (4) an industrial medical service dealing with the conditions of those engaged in certain industries, (5) a consultant medical service, (6) a hospital medical service comprising institutions for resident medical treatment of all kinds." On the administrative side Sir Henry saw the abolition or reduction in influence not only of the approved societies but also of a wide variety of minor local and often overlapping organizations, with which would come a unification and centralization of authority in regional and sometimes national bodies. This, he said, would require higher qualifications for medical officers of health and this, in turn, might involve important changes in medical education. Thus, as American "slanguage" would say, "comes the revolution." These are parlous times. The patterns are being designed for the world of the future. The message of Sir Henry Brackenbury sounds the "alert" for American medicine.

TUBERCULOSIS AMONG MEDICAL STUDENTS

Pulmonary tuberculosis is one of the great occupational hazards of medical students and nurses. Indeed, in the 1938 report of the Association of Medical Students Committee on Student Health an average tuberculosis rate of 7 per cent in all medical schools was estimated, although less alarming figures are obtained from several of the medical schools at which control studies have been made: A 0.2 per cent incidence has been reported from Cornell, a 0.4 per cent case rate at Columbia and similarly low figures at Stanford, Wisconsin and Yale and other schools with well established health programs. The success of these control programs, Weinerman and Coe [1] believe, points the way toward which all student health services must strive. The first emphasis of the controlled program must be on prevention, with the effort principally directed toward the environment and contact with patients or laboratory materials. The living and eating conditions of the students should be supervised and maintained at standards compatible with good health in order to elevate the levels of student resistance. Proper opportunities for recreation and exercise should be provided. In addition, due precautions should be taken to eliminate any potential reservoir of infection in restaurant, boarding house and hospital personnel and in necropsy and laboratory rooms to prevent the escape of tubercle bacilli. Tuberculin testing should be performed on admission to medical school and at intervals thereafter. It must be recognized likewise that periodic x-ray

1. Weinerman, E. R., and Coe, F. O.: The Control of Tuberculosis Among Medical Students, with Additional Reference to Interns and Student Nurses, Journal-Lancet **62**: 115 (April) 1942.

examination is the only sure method of recognition of the disease. The entire problem has become especially pressing in the light of the speed up program of medical education, which may be expected to influence students to take short cuts in maintaining their resistance. In this battle to maintain health the Tuberculosis Committee, American Student Health Association,[2] is assuming a valuable role.

IMPROVEMENT OF HEALTH IN TWENTY-FIVE YEARS

The health of the American people is essential in the war effort. Fortunately the country has never been better fortified in this regard than it is today. A succession of noteworthy discoveries in medical science and developments in public health have prepared us better for the hardships and vicissitudes of modern warfare than we were twenty-five years ago. The experience among industrial policyholders of the Metropolitan Life Insurance Company [1] proves that the adjusted death rate has been reduced slightly more than 50 per cent in the course of the last quarter century. This reduction has appeared in practically every important cause of death. Indeed the diseases of childhood and infancy have been virtually eliminated as a cause of death within this period, thus resulting not only in a substantial saving of life at early ages but also the sparing of many disabling sequels of these diseases to young people living today. The death rate from tuberculosis among industrial policyholders has been reduced to about one-fifth that of 1917; the mortality from syphilis is less than half of what it was in 1917. Similar trends have been manifest for pneumonia, maternal mortality and appendicitis. For motor vehicle accidents, however, the rate has more than doubled since 1917—the one notable exception. The experience of this large group of industrial policyholders may be considered generally applicable to the nation as a whole.

STUDENT SECTION

With its appearance in this issue the Student Section of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is being temporarily discontinued. The tremendous demands placed on the time of the medical student because of the accelerated program and the great requirement for space in the columns of THE JOURNAL necessary because of the war effort seem to make it inadvisable to continue to carry this section at least until after the war shall have ended. The Board of Trustees at a recent session gave careful consideration to the problem. It was then decided to omit the Student Section as here indicated. Nevertheless, it is hoped to publish in the news columns of THE JOURNAL all items of importance relating to medical education, particularly as affected by the war. Incidentally, more than four thousand medical students regularly subscribe to THE JOURNAL.

2. Eleventh Annual Report of the Tuberculosis Committee, American Student Health Association (for the Academic Year 1940-1941), Journal-Lancet **62**: 125 (April) 1942.

1. Statistical Bulletin, Metropolitan Life Insurance Company **23**, March 1942.

GASOLINE RATIONING AND MOTOR TRAVEL TO ATLANTIC CITY CONVENTION

Physicians who plan to travel by automobile to the annual session at Atlantic City should keep in mind that a gasoline rationing program became effective on May 15 in states along the eastern seaboard. The ration area includes the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, that part of Florida east of Apalachicola, the District of Columbia, and the city of Bristol, Tenn. Subject to certain exemptions not pertinent to physicians who will attend the convention, no person in the rationed area will be able to buy gasoline without a ration card. Three basic classes of cards are issued. The class A card will entitle the holder to purchase such minimum supplies of gasoline as may be publicly announced by the Office of Price Administration. Such cards are issued generally where the motor vehicle is used solely for pleasure. Persons customarily using their cars in driving to and from and in the course of their gainful occupation to an extent greater than would be permitted by the basic allotment given on A cards will be issued B-1, B-2 or B-3 cards, depending on the amount of gasoline for which they show a need. An X card, permitting the acquisition of unlimited quantities of gasoline, is issued to physicians and nurses and certain others included in this preferred category on the basis of a certification by the applicant that the motor vehicle for which the gasoline is desired is used entirely or almost entirely in connection with the professional duties of the applicant. Stated in the language of the Application for Gasoline Ration Card X (form OPA R-506) the physician applicant must certify that the gasoline will be used in a motor vehicle "for rendering medical . . . services." Physicians who practice in the rationed area will no doubt have made application for and received their X ration card by now. The Office of Price Administration advises that these cards will be usable to procure gasoline in any state in the rationed area and may be used in connection with attendance at the Atlantic City session. Physicians coming into the rationed area will find it necessary, in order to procure gasoline, to obtain a ration card from a local rationing board in that area. Such boards, it is understood, will be conveniently located in all communities. In making plans to attend the convention by automobile, physicians should keep these conditions in mind. Ration cards cannot be obtained in advance by mail; application must be made personally by the physician. While advice received from Washington would indicate that little delay may be anticipated in obtaining the cards, local conditions and reactions may interfere with an expeditious handling of the application. In view of all the circumstances, and taking into consideration the difficulties incident to the replacement of automobile tires, physicians from a distance should give serious consideration to using means of transportation other than the automobile to attend the convention.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

OCCUPATIONAL DEFERMENTS OF DOCTORS, DENTISTS AND VETERINARIANS

The following memorandum (I-420) was sent to all state directors by Lewis B. Hershey, director of the Selective Service System, Washington, D. C. This amendment involves a change from Corps Area Committee of Procurement and Assignment Service to separate state chairmen for medical doctors, dentists and doctors of veterinary medicine and also a change with respect to the consideration of dependency in classifying such registrants.

NATIONAL HEADQUARTERS

SELECTIVE SERVICE SYSTEM

21ST STREET AND C STREET N. W.

WASHINGTON, D. C.

January 28, 1942
Amended 4/28/42

MEMORANDUM TO ALL STATE DIRECTORS (I-363)
LOCAL BOARD RELEASE (89)

SUBJECT: Occupational Deferments of Medical Doctors, Dentists and Doctors of Veterinary Medicine (III).

1. Information previously distributed by this headquarters clearly indicates an overall shortage of medical doctors, dentists and doctors of veterinary medicine in the nation. Since war was declared, the shortage of these professional men has become acute. It is now manifest that every qualified doctor, dentist and veterinarian must serve where he can render the greatest professional service to the nation.

2. In order to accomplish this purpose, the President, by executive order, has formed the Procurement and Assignment Service. This service was formed primarily for the purpose of gathering and making available information with respect to the supply of qualified practitioners in the fields of medicine, dentistry and veterinary medicine, with a view of securing the most effective allocation of medical manpower as indicated by the requirements of the armed forces, civilian needs and industrial medicine.

3. To work with the headquarters of the Procurement and Assignment Service there has been appointed for each state and the District of Columbia a state chairman for medical doctors, a state chairman for dentists and a state chairman for doctors of veterinary medicine. These state chairmen will secure information concerning their respective professions and will give advice regarding the allocation of medical manpower.

4. When considering the classification of any registrant who is a qualified medical doctor, dentist or doctor of veterinary medicine, the director of Selective Service desires that local boards, through the state director, shall consult with the respective state chairman of the Procurement and Assignment Service.

5. In considering the classification of a registrant who is a qualified medical doctor, dentist or doctor of veterinary medicine, the local board may, if it finds such registrant should not be deferred for reasons other than dependency, take into consideration the pay and allowances which such registrant would receive in the event he is commissioned in the armed forces. In practically all instances the pay and allowances of such registrant, if he was commissioned as an officer, would be sufficient to eliminate the question of dependency.

6. For the convenience of the state director and the local boards, the names and addresses of the respective state chairmen of the Procurement and Assignment Service are listed herewith.

	Medical	*Dental*	*Veterinary Medical*
ALABAMA	Dr. B. F. Austin, 519 Dexter Avenue, Montgomery	Dr. C. B. Bray, Amer. Cast Iron Pipe Co. Birmingham	Dr. R. S. Sugg, School of Vet. Medicine Ala. Polytech. Inst., University
ARIZONA	Dr. Charles S. Smith, Nogales	Dr. W. A. Baker, Professional Building, Phoenix	Dr. T. B. Jones, 105 Capitol Building, Phoenix
ARKANSAS	Dr. W. R. Brooksher, 602 Garrison Avenue, Fort Smith	Dr. I. M. Sternberg, Merchants Bank Bldg., Fort Smith	Dr. Joe S. Campbell, Route 4,
CALIFORNIA	Dr. Harold A. Fletcher, 490 Post Street, San Francisco	*Southern* Dr. Kenneth Ruedy, 3780 Wilshire Blvd., Los Angeles *Northern* Dr. J. W. Leggett, 490 Post Street, San Francisco	Dr. Joseph M. Arburua, 26 Fell Street, San Francisco
COLORADO	Dr. John Amesse, 624 Metropolitan Bldg., Denver	Dr. E. M. Silverberg, 809 Republic Building, Denver	Dr. Floyd Cross, Colorado State College, Fort Collins
CONNECTICUT	Dr. Creighton Barker, 258 Church Street, New Haven	Dr. Louis R. Siegal, 750 Main Street, Hartford	Dr. Edwin Laitinen, 993 North Main Street, West Hartford
DELAWARE	Dr. William H. Speer, 917 Washington St., Wilmington	Dr. William Stewart, Medical Arts Building, Wilmington	Dr. Harry McDaniel Jr., State Bldg. of Agr., Dover
DISTRICT OF COLUMBIA	Dr. F. X. McGovern, 1835 Eye Street N. W., Washington, D. C.	Dr. George Albert Smith, 1835 Eye St. N. W., Washington, D. C.	Dr. A. E. Wight, Bureau of Animal Industry, Washington, D. C.
FLORIDA	Dr. Edward Jelks, Box 1018, Jacksonville	Dr. E. C. Lunsford, 2742 Biscayne Blvd., Miami	Dr. J. L. Ruble, 1600 North Orange Ave., Orlando
GEORGIA	Dr. Edgar H. Greene, 875 W. Peachtree St. N. E., Atlanta	Dr. R. H. Murphy, 920 Persons Bldg., Macon	Dr. J. M. Sutton, Sylvester
IDAHO	Dr. F. M. Cole, Caldwell	Dr. J. E. Bennett, Idaho Falls	Dr. Arthur P. Schneider, Director, Bureau of Animal Industry, Boise
ILLINOIS	Dr. Harold M. Camp, 2245 South Main St., Monmouth	Dr. William I. McNeil, 59 East Madison St., Chicago	Dr. A. E. Bott, Corn Belt Laboratories, East St. Louis

	Medical	*Dental*	*Veterinary Medical*
INDIANA	Dr. Charles R. Bird, 23 E. Ohio St., Indianapolis	Dr. H. T. Berkey, Wayne Pharmacal Bldg., Fort Wayne	Dr. Charles C. Dobson, New Augusta
IOWA	Dr. T. F. Suchomel, 305 2d St., Cedar Rapids	Dr. John Voss, Voss Bldg., Iowa City	Dr. A. R. Menary, 1721 Blake Blvd., Cedar Rapids
KANSAS	Dr. F. L. Loveland, 109 W. 9th St., Topeka	Dr. John W. Richmond, Huron Bldg., Kansas City	Dr. R. R. Dykstra, Kansas State College, Manhattan
KENTUCKY	Dr. Arthur T. McCormack, 620 S. 3d St., Louisville	Dr. E. C. Hume, 746 Francis Bldg., Louisville	Dr. Arthur J. Kay, 517 Murray St., Frankfort
LOUISIANA	Dr. C. Grenes Cole, 921 Canal St., New Orleans	Dr. Larry Dupuy, 837 Maison Blanche Bldg., New Orleans	Dr. E. P. Flower, Box 24, Baton Rouge
MAINE	Dr. John G. Towne, 135 Main St., Waterville	Dr. Giles C. Grant, 655 Congress St., Portland	Dr. P. R. Baird, 52 Pleasant St., Waterville
MARYLAND	Dr. Charles W. Maxson, 1211 Cathedral Street, Baltimore	Dr. T. J. Bland, Medical Arts Building, Baltimore	Dr. A. L. Brueckner, College Park
MASSACHUSETTS	Dr. Reginald Fitz, 319 Longwood Avenue, Boston	Dr. Andrew J. Rafferty, 390 Main Street, Worcester	Dr. Harrie W. Peirce, 100 Nashua Street, Boston
MICHIGAN	Dr. P. R. Urmston, 916 Washington Avenue, Bay City	Dr. J. O. Goodsell, Second Natl. Bank Bldg., Saginaw Send copies of all publicity and correspondence to Mr. H. C. Gerber Jr., Executive Secretary, Michigan State Dental Soc., Olds Tower Bldg., Lansing	Dr. B. J. Killham, Michigan State College, East Lansing
MINNESOTA	Dr. William F. Braasch, 102 Second Street, Rochester	Dr. J. P. Werrick, Medical Arts Building, Room 1015, Minneapolis	Dr. C. E. Cotton, 3145 Portland Avenue, Minneapolis
MISSISSIPPI	Dr. T. M. Dye, Box 295, Clarksdale	Dr. George P. Evans, Standard Life Building, Jackson	Dr. E. S. Brashier, State Veterinary and Executive Officer, Mississippi State Live Stock Sanitary Board, Jackson
MISSOURI	Dr. Robert Mueller, 3115 South Grand Ave., St. Louis	Dr. R. J. Rinehart, Kansas City Western Dental College, Kansas City	Dr. S. W. Haigler, 7645 Delmar Boulevard, St. Louis
MONTANA	Dr. Herbert Caraway, 115 North 28th Street, Billings	Dr. D. H. McCauley, 9 First Avenue, Laurel	Dr. W. J. Butler, Care of Capitol Station, Helena
NEBRASKA	Dr. A. A. Conrad, 416 Federal Securities Bldg., Lincoln	Dr. Lawrence A. Donahoe, 1128 City National Bank Bldg., Omaha	Dr. W. T. Spencer, Livestock Exchange Bldg., Omaha
NEVADA	Dr. C. W. West, 120 N. Virginia St., Reno	Dr. G. C. Steinmiller, Masonic Temple, Reno	Dr. Edward Records, University of Nevada, Reno
NEW HAMPSHIRE	Dr. Deering G. Smith, 77 Main St., Nashua	Dr. William H. Putney, 85 Pleasant St., Concord	Dr. R. W. Smith, State House, Concord
NEW JERSEY	Dr. Chas. H. Schlichter, 31 Clinton St., Newark	Dr. E. C. Stillwell, 815 Bloomfield Ave., Glen Ridge	Dr. A. W. Smith, 8 Longview Road, Livingston
NEW MEXICO	Dr. L. B. Cohenour, 221 Central Ave., Albuquerque	Dr. M. R. Chapin, El Moro Bldg., Gallup	Dr. S. W. Wiest, Box 75, Santa Fe
NEW YORK	Dr. Henry W. Cave, 107 E. 67th St., New York	Dr. William McG. Burns, 80 Hanson Place, Brooklyn	Dr. Albert L. Brown, Route 1, Adams
NORTH CAROLINA	Dr. Hubert B. Haywood, 127 W. Hargett St., Raleigh	Dr. H. O. Lineberger, 804 Professional Bldg., Raleigh	Dr. William Moore, State Veterinarian, Raleigh
NORTH DAKOTA	Dr. L. W. Larson, 221 5th St., Bismarck	Dr. A. O. Schjeldahl, 523½ 5th Ave., Valley City	Dr. R. E. Shigley, 710 2d St., S. E., Minot
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OKLAHOMA	Dr. Henry H. Turner, 1200 North Walker, Oklahoma City	Dr. A. C. Seids, 1200 North Walker, Oklahoma City	Dr. L. J. Allen, 1610 North Ellison, Oklahoma City
OREGON	Dr. Wilson Johnston, 1020 S. W. Taylor St., Portland	Dr. N. L. Zimmerman, Medical Dental Bldg., Portland	Dr. Fred W. Lange, 855 Belmont Street, Salem
PENNSYLVANIA	Dr. Charles H. Henninger, 500 Penn Avenue, Pittsburgh Dr. William L. Estes Jr., 314 W. 4th Street, Bethlehem	Dr. H. H. Nones, 1930 Chestnut St., Philadelphia	Lieut. Col. Ernest W. Hogg, V. C., 20 Darling Street, Wilkes-Barre
RHODE ISLAND	Dr. Halsey DeWolf, 199 Thayer Street, Providence	Dr. E. C. Elliott, 615 Union Trust Building, Providence	Dr. J. S. Barber, 560 Pleasant Street, Pawtucket
SOUTH CAROLINA	Dr. W. L. Pressley, Due West	Dr. E. W. Shepard, Andrews Building, Spartanburg	Dr. R. A. Mays, J. C. Calhoun State Office Bldg. Columbia
SOUTH DAKOTA	Dr. William Duncan, Webster	Dr. R. W. Ellis, Salem	Dr. D. L. Cotton, Beresford
TENNESSEE	Dr. W. C. Dixon, 706 Church Street, Nashville	Dr. Lawrence T. Kennedy, Medical Arts Bldg., Knoxville	Dr. M. Jacob, University of Tennessee, Knoxville
TEXAS	Dr. Holman Taylor, 1404 West El Paso St., Fort Worth	Dr. J. E. Robinson, Medical Arts Building, San Antonio	Dr. T. O. Booth, 2002 W. T. Waggoner Bldg., Fort Worth
UTAH	Dr. Alfred C. Callister, 54 East South Temple St., Salt Lake City	Dr. C. O. Robinson, Medical Arts Building, Salt Lake City	Dr. W. H. Hendricks, 1419 East 17th South St., Salt Lake City

	Medical	*Dental*	*Veterinary Medical*
VERMONT	Dr. Benjamin F. Cook, 46 Nichols St., Rutland	Dr. Maxwell L. Jameson, 69 Pine St., Burlington	Dr. A. A. Mortimer, 27 Central St., Randolph
VIRGINIA	Dr. Hugh H. Trout, 1301 Franklin Road, Roanoke	Dr. J. H. John, Medical Arts Bldg., Roanoke	Dr. I. D. Wilson, Virginia Polytechnic Institute, Blacksburg
WASHINGTON	Dr. Raymond Zech, 509 Olive Way, Seattle	Dr. L. L. Foote, Medical and Dental Bldg., Seattle	Dr. M. O. Barnes, 203 Federal Bldg., Olympia
WEST VIRGINIA	Dr. Robert K. Buford, 1031 Quarrier St., Charleston	Dr. I. J. Kail, 1017 First National Bank Bldg., Huntington	Dr. H. M. Newton, P. O. Box 1721, Charleston
WISCONSIN	Dr. R. E. Fitzgerald, 2750 N. Teutonia Ave., Milwaukee	Dr. Charles Baumann, 408 West Greenfield Ave. Milwaukee	Dr. W. Wisnicky, University of Wisconsin, Madison
WYOMING	Dr. George H. Phelps, 1606 Capitol Ave., Cheyenne	Dr. L. C. Hunt, 308 W. 3d Ave., Cheyenne	Dr. H. D. Port, 304 Capitol Bldg., Cheyenne

WAIVER OF PHYSICAL DEFECTS FOR LIMITED SERVICE OFFICERS

The Surgeon General of the U. S. Army announced April 23 the following policies of his office concerning recommendations for waiver for limited service officers. These policies were announced in order that the provisions of AG-210.31 (12-19-41) RP-A Jan. 7, 1942, may be carried out in a uniform manner.

1. *a.* Considered acceptable for limited service:

(1) Overweight to 25 per cent above average weight for age and height, and even greater degrees of overweight, provided the individual is not decidedly obese and provided that because of his special training in civil life he is peculiarly fitted to fill a particular technical assignment in the Army; and underweight to 15 per cent below ideal weight, provided chest x-ray examination is negative for pulmonary pathologic conditions and other chronic disease is carefully excluded.

(2) Any degree of uncorrected vision, provided it is corrected with glasses in possession of the examinee to 20/20 in one eye and to 20/40 in the other and provided that no organic disease of either eye exists.

(3) Blindness or corrected vision below 20/40 in one eye with vision 20/200 corrected with glasses in possession of the examinee to 20/20 in the other, provided there is no organic disease in the better eye and no history of cataract or other disease in the more defective eye which might be expected to involve the better one, and provided that in case of ophthalmosteresis the individual is fitted with a satisfactory prosthesis.

(4) Complete color blindness.

(5) Hearing 5/20 in each ear for low conversational voice, or complete deafness in one ear with hearing 10/20 or better in the other, provided the defect is not due to active inflammatory disease and is stationary in character.

(6) Chronic otitis media, inactive, with perforation of membrana tympani, provided there is a trustworthy history of freedom from activity for the preceding five years.

(7) Old fracture of the spine or pelvic bones which has healed without definite deformity, provided there is a trustworthy history of freedom from symptoms during the preceding two years.

(8) Loss of one hand, one forearm, or one lower extremity below the junction of the middle and lower thirds of the thigh, provided the lost member is replaced with a satisfactory prosthesis.

(9) Pes planus, pes cavus or talipes equinus, provided the condition is not more than mildly symptomatic, does not interfere with normal locomotion and has not interfered with the individual's vocation in civil life.

(10) History of osteomyelitis following fracture, provided x-ray examination indicates complete healing and the condition has been asymptomatic for the preceding five years.

(11) Joints fixed or limited in motion, provided the condition is the result of injury and is nonsymptomatic.

(12) History of excision of torn or detached semilunar cartilage of knee joint, provided there is normal stability of the joint and a period of one year with complete freedom from symptoms has elapsed since the operation.

(13) Residuals of anterior poliomyelitis, without pronounced deformity or loss of function, originating two years or more prior to examination.

(14) Varicose veins, moderate, without edema or discoloration of skin.

(15) History of gastric or duodenal ulcer, provided there is a trustworthy history of freedom from activity during the preceding five years and provided that the gastrointestinal roentgenogram at the time of examination is negative.

(16) Incomplete inguinal hernia.

(17) Small asymptomatic congenital umbilical hernia.

(18) Absence of one kidney, provided its removal has been necessitated by other than tuberculosis or malignancy and the other kidney is normal.

b. Considered unacceptable for any service.

(1) History of malignant disease within preceding five years.

(2) Active tuberculosis of any organ and inactive pulmonary tuberculosis except as described in paragraph 2*a*.

(3) Syphilis, except adequately treated syphilis as described in paragraph 2*b*.

(4) Old fracture of the skull with bony defect greater than 2 cm. in longest diameter or with history of accompanying mental or neurologic complications.

(5) Instability of any of the major joints.

(6) History of metastatic osteomyelitis with prolonged or recurrent drainage, regardless of duration.

(7) Arthritis of the atrophic (rheumatoid) type.

(8) Any cardiovascular condition which disqualifies for general military service.

(9) History of gastroenterostomy, gastric resection, intestinal anastomosis or operation for intestinal obstruction.

(10) History of prostatectomy or transurethral resection of prostate or of prostatic hypertrophy of any degree.

(11) Chronic endocrine disease except mild hypothyroidism or mild Froehlich's syndrome.

(12) Diabetes mellitus of any degree or renal glycosuria.

(13) History of any psychosis.

(14) History of severe psychoneurosis at any time, or psychoneurosis of any degree if it has been recurrent or has shown symptoms within the preceding five years.

2. The following may be recommended for general military service with waiver:

a. Individuals with minimal inactive lesions of primary or reinfection type pulmonary tuberculosis. These lesions may consist of:

(1) Calcified residues of lesions of the intrathoracic lymph nodes, provided none of these exceed an arbitrary limit of 1.5 cm. in diameter and the total number does not exceed five.

(2) Calcified lesions of the pulmonary parenchyma, provided the total number does not exceed ten, one of which may equal but not exceed 1 cm. in diameter, but none of the remainder may exceed 0.5 cm. in diameter.

(Note: The lesions described in (1) and (2) should appear sharply circumscribed, homogeneous and dense. Measurements refer to standard 14 by 17 inch direct projection roentgenograms.)

(3) Small fibrotic parenchymal lesions represented in the roentgenogram as sharply demarcated strandlike or well defined small nodular shadows not exceeding a total area of 5 sq. cm., provided acceptance is deferred until subsequent examination

demonstrates that the lesions are stationary and are not likely to be reactivated. The minimum period of time to determine this is six months. It must be recognized that either progression or regression of the lesions indicates activity.

b. Individuals with confirmed position serologic tests for syphilis with no clinical evidence of the disease, with convincing histories of a trustworthy diagnosis of syphilis or with reliable histories of treatment for the disease on serologic or clinical grounds, provided

(1) That a negative spinal fluid since infection and treatment has been reported from a trustworthy source;

(2) That in infections estimated to be of less than four years' duration, at least thirty to forty arsenical and forty to sixty insoluble bismuth injections or their equivalent, with a minimum total of seventy-five injections, have been given, with approximate continuity (no rest periods or lapses) during the first thirty weeks of treatment; and

(3) That, except as further qualified, in infections estimated to be over four years' duration, at least twenty arsenical injections and forty to sixty insoluble bismuth injections or their equivalent, with a minimum total of sixty injections, have been given in alternating courses; rest periods between consecutive courses not exceeding eight weeks being allowable.

In infections of unknown duration it shall be presumed for classification purposes that those of individuals under 26 years of age are of less than four years' duration and over 26 years of more than four years' duration.

(Note: For the determination of treatment, the signed statement of acceptable treatment sources administering it, with total number of doses of each drug and approximate calendar dates of administration and available laboratory and clinical data, shall be required as evidence.)

c. Overweight to 20 per cent above average weight for age and height, and underweight to 12.5 per cent below ideal weight, provided chest x-ray examination is negative for pulmonary pathologic conditions and other chronic disease is carefully excluded.

d. Insufficient incisor or masticating teeth, provided the mouth is free from extensive infectious processes and the examinee is wearing satisfactory dentures.

e. Pilonidal cyst or sinus, provided there is no palpable tumor mass, no evidence of purulent or serous discharge and no history of previous discharge or inflammation.

f. History of healed fracture with bone plates, screws or wires used for fixation of fragments still in situ, provided x-ray examination shows no evidence of osteomyelitis and no rarefaction of bone contiguous to the fixative materials; that such fixative materials are not so located that they will be subjected to pressure from military clothing or equipment, and that one year has elapsed since their application.

g. History of operation or of injection treatment for inguinal or small ventral hernia, provided examination three months or more following operation, or following the last injection, shows a satisfactory result.

h. History of unilateral renal calculus, provided the condition has been asymptomatic for the preceding three years, urine examination is negative and roentgenologic examination (flat plate) of both kidneys is negative.

i. Absence of the spleen, provided its removal has been necessitated by a crushing injury.

j. History of cholecystectomy, provided the condition has been asymptomatic for the preceding two years.

3. The action of the reviewing medical authority should indicate on the Report of Physical Examination, W. D., A. G. O. Form No. 63, that cognizance has been taken of any defects which do not meet the standards set forth in AR 40-105, but for which waiver is recommended by a notation as follows:

"Recommend acceptance for general military service with waiver of (here record the defect or defects)", or

"Recommend acceptance for limited service only with waiver of (here record the defect or defects)."

4. It should be understood that this communication sets forth the policy of this office with regard to recommendations for waiver in the case of applicants for appointment and officers of the Reserve components under consideration for extended active duty. It is not intended that officers already in active service shall be recommended for appearance before retiring boards because of defects which would be considered disqualifying according to the policies set forth. The recommendations of disposition boards of general hospitals will be based on the principle that officers should be retained on active duty as long as they are capable of rendering efficient service unless they have conditions not incident to the service which are likely to progress to incapacity and eventually result in retirement in line of duty. The findings of disposition boards should clearly indicate that the officer under consideration is physically fit for limited service only when such is the case.

By order of the Surgeon General:

JOHN A. ROGERS,
Colonel, Medical Corps,
Executive Officer.

TWENTY-SEVEN MEDICAL RECRUITING BOARDS

According to the *Army and Navy Journal* the War Department has released the names of members of twenty-seven recruiting boards in states east of the Mississippi River who will commission medical officers. The recruiting boards for states west of the Mississippi will be announced at a later date, following completion of arrangements by Lieut. Col. James R. Hudnall, M. C., in the office of the Surgeon General, and Lieut. Col. Sam F. Seeley, M. C., of the Procurement and Assignment Service.

Members of the state boards are:

Alabama—Lieut. Col. A. R. Nichols, Infantry, and Major G. C. Woodruff, M. C.

Connecticut—Major E. E. Williams, M. C., and Capt. H. F. Moore, Infantry.

Delaware and Southern New Jersey—Major A. B. van Raalte Adjutant General's Department, and Capt. R. H. Lowe, M. C.

Maryland and District of Columbia—1st Lieut. E. B. Sirotta, M. C., and 1st Lieut. Samuel T. Faber, Infantry.

Florida—Major W. E. Murphree, M. C., and Major J. J. Laird, Infantry.

Georgia—Lieut. Col. B. G. Owens, M. C., and Capt. Thomas H. Folk, Infantry.

Illinois—Lieut. Col. R. L. Olmstead, M. C., and Major John F. Gardiner, Infantry.

Indiana—Capt. J. H. Miller, Infantry, and Capt. Clarence E. Northup, M. C.

Kentucky—Capt. H. J. Brinker, M. C., and Capt. H. C. Lockhart, Adjutant General's Department.

Louisiana—Major George R. Benton, M. C., and Capt. J. H. Fox, Infantry.

Maine—Capt. W. P. Weber, M. C., and 1st Lieut. R. C. Maxant, Infantry.

Massachusetts—Lieut. Col. Alexander Marble, M. C., and Capt. T. J. Quinn, Infantry.

Michigan—Lieut. Col. Paul T. Priestly, Infantry, and Major John J. Slevin, M. C.

Mississippi—Major C. D. Mitchell, M. C., and Capt. William C. Edgeworth, Infantry.

New Hampshire—Capt. E. L. Wiemers, M. C., and 1st Lieut. R. G. Vedeler, Cavalry.

New York (northwestern)—Col. Arthur T. Boettcher, Infantry, and Major Edward K. Reid, M. C.

New York (southern) and New Jersey (northern and central)—Major William D. Thornton, Infantry, and Capt. J. J. McMahon, M. C.

North Carolina—Major McKinnon Carmichael, Infantry, and Major Roy C. Tatum, M. C.

Ohio—Major Lewis W. Cellio, M. C., and 1st Lieut. H. S. Wilson, Adjutant General's Department.

Pennsylvania—Major Gerald M. Fluegel, M. C., and Major E. A. Curran.

Rhode Island—Lieut. Col. G. W. Wells, M. C., and 2d Lieut. Paul M. Fontaine.

South Carolina—Lieut. Col. W. C. Goley, M. C., and Major William Phillips, Infantry.

Tennesse—Lieut. Col R. C. Risburg, Field Artillery, and Capt. R. B. Christman, M. C.

Vermont—Major F. E. Lewis, M. C., and 1st Lieut. Henry E. Dockler, Cavalry.

Virginia—Capt. R. M. Jacobson, M. C., and Capt. John B. Clark, Infantry.

West Virginia—Capt. Richard D. Pirnack, Cavalry.

Wisconsin—Lieut. Col. Amory A. Miller, Infantry, and Capt. Norman L. Sheehe, M. C.

DAYTON SPECIALIST UNIT ORDERED OVERSEAS

Medical Specialist Unit No. 57, U. S. Naval Reserve, composed of physicians from Dayton, Ohio, which was one of the first units of this kind to be called to active duty and stationed at a naval hospital in this country, has been ordered overseas. The officers comprising the unit are Comdr. Walter M. Simpson, internist, and Lieut. Comdrs. Marion W. Coleman, urologist; Harry R. Huston, surgeon; Jerome Hartman, orthopedist; Lawrence F. Patterson, dental surgeon; James L. Sagebiel, neuropsychiatrist and Lieuts. Norman J. Birkbeck, roentgenologist; Thomas P. Sharkey, alternate internist, and Paul L. Yordy, anesthetist. According to the *Ohio State Medical Journal* this unit was organized in 1935 by Commander Simpson at the request of the Surgeon General of the Navy.

TWO NEW REAR ADMIRALS

President Roosevelt has approved the promotion to rear admiral of Capts. Dallas G. Sutton and Charles W. O. Bunker of the U. S. Navy Medical Corps. Captain Bunker, who is at present in command of the Navy Medical School, Washington, D. C., graduated from Cornell University in 1905 and joined the Navy as assistant surgeon two years later. He served with the Navy in European waters during the first world war and later on the U. S. Hospital Ship *Relief* and at the naval hospitals in New York and Washington. Captain Sutton, who at present is in command of the Norfolk Naval Hospital, Portsmouth, Va., graduated from George Washington University School of Medicine in 1906 and was appointed assistant surgeon in the Navy in 1907. He has served on the U. S. Hospital Ship *Relief*, the U. S. S. *Mellville*, at the naval hospitals at Pensacola, Fla., and Great Lakes, Ill., at the Naval Academy, Annapolis, Md., and was formerly in command of the Navy Medical School.

STATE HEALTH DEPARTMENT FOLLOWS UP REJECTEES

In a program to rehabilitate selective service men deferred on account of tuberculosis, the Illinois state health director, Dr. Roland R. Cross, announces that so far out of 594 men deferred for tuberculosis in Illinois since November 1940 the state health department has found only 21 who previous to their deferment had been reported to the state health department as having had tuberculosis. The health department has arranged to reexamine the entire remaining group through Medical Advisory Board No. 39 in order that the active tuberculous cases may be cared for through the usual channels and the men with inactive lesions referred to their own physicians for medical supervision. Dr. Cross said that a man is not acceptable to the army for active military duty if he has five or more calcified spots on his lungs; however, such men can safely carry on ordinary civilian activities without undue fear of relapse.

GRADUATION AT CARLISLE BARRACKS

Two hundred and sixty-six officers of the medical department of the army graduated from the Medical Field Service School at Carlisle Barracks, Pa., May 2, after completing two months' field training. The ceremonies were held in the post theater at Carlisle Barracks, which is one of the oldest army posts in this country. The address was made by Brig. Gen. Addison B. Davis, Assistant Surgeon General of the Army. The class represented forty states, the District of Columbia and Haiti and comprised one hundred and seventy-one officers of the medical corps, sixty-two of the dental corps, twelve of the veterinary corps and twenty-four of the medical administrative corps. The class also comprised two hundred and fifteen reserve officers, thirty-nine National Guard officers, and twelve regular army officers, and the various ranks were represented from second lieutenants to lieutenant colonels. This was the twelfth class to graduate at Carlisle Barracks. Another class of officers began this course of instruction on May 9.

COMMISSIONS FOR DENTAL AND VETERINARY STUDENTS

Physically qualified male citizens of the United States above the age of 18 years who are bona fide accepted matriculants at approved dental or veterinary schools in the United States may now be appointed as second lieutenants, Army of the United States, Medical Administrative Corps. Officers so appointed will not be ordered to active duty until eligible for appointment as first lieutenant in the Dental or Veterinary Corps of the Army. Applications and accompanying papers must be forwarded by the dean of the dental or veterinary school to the commanding general of the corps area in which the school is located, together with a certified statement that the applicant is a bona fide accepted matriculant in dentistry or veterinary medicine at the institution.

Dental and veterinary students so appointed will be discharged for the convenience of the government, under the following circumstances:

(*a*) Discontinuance of dental or veterinary education.

(*b*) Matriculation at an unapproved school of dentistry or veterinary medicine.

(*c*) Failure to complete successfully the four year course of dental or veterinary instruction.

(*d*) Failure to secure appointment in the dental or veterinary corps of the Army within three months after completion of the prescribed four year course of dental or veterinary instruction.

CHANGES IN ARMY CORPS AREAS

The following changes have been made by the War Department in the states composing the various U. S. Army corps areas: Louisiana has been taken from the fourth corps area and placed in the eighth corps area, Colorado has been taken from the eighth corps area and placed in the seventh, and Arizona has been taken from the eighth corps area and placed in the ninth corps area. The corps areas as now constituted comprise the following states:

First	South Carolina	Iowa
Maine	Alabama	Kansas
Vermont	Georgia	Missouri
New Hampshire	Mississippi	Arkansas
Rhode Island	Florida	Wyoming
Massachusetts	*Fifth*	Colorado
Connecticut	Ohio	*Eighth*
Second	West Virginia	New Mexico
New York	Indiana	Oklahoma
New Jersey	Kentucky	Texas
Delaware	*Sixth*	Louisiana
Third	Wisconsin	*Ninth*
Pennsylvania	Illinois	Washington
Virginia	Michigan	Montana
District of Columbia	*Seventh*	Oregon
Maryland	North Dakota	Nevada
Fourth	South Dakota	Utah
Tennessee	Minnesota	California
North Carolina	Nebraska	Idaho
		Arizona

HAWAII MEDICAL JOURNAL

The January 1942 issue of the *Hawaii Medical Journal* is the first volume of this periodical published since the Japanese raid on Pearl Harbor. Most of the articles have to do with the medical experiences immediately following December 7 and with the methods of treatment of air raid injuries carried out and the results of treatment; there is also an illustrated chart of various warfare gases pointing out how to detect their presence, their physiologic effect, how to protect against them, treatment and other general instructions. The observations comprise not only those made at the U. S. Naval Hospital at Pearl Harbor and the Tripler General Hospital, Fort Shafter, but also in some of the civilian hospitals in Honolulu.

OHIO PHYSICIANS ON BATAAN PENINSULA

Among the physicians who were known to be on Bataan Peninsula in the Philippine Islands with General Wainwright were Major C. G. Jackson of Kenton and Lieut. David Brown of Columbus, graduates of Ohio State University College of Medicine in 1931 and 1935, respectively.

ORGANIZATION SECTION

OFFICIAL NOTES

ATLANTIC CITY SESSION

Transportation to Atlantic City

Fellows desiring to attend the Atlantic City session are urged to purchase transportation immediately.

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Change in Status.—H. R. 4476 has passed the Senate, providing for sundry matters affecting the military establishment. As passed by the Senate, this bill retains an authorization for the employment of interns in army hospitals who are graduates of or have successfully completed at least four years' professional training in reputable schools of medicine or osteopathy, at not to exceed $720 per annum. An amendment agreed to by the Senate continues in force the provisions of this bill during the present war and for six months after the termination of the war, or until such earlier time as the Congress by concurrent resolution or the President by proclamation may designate.

Bills Introduced.—The President has submitted a supplemental estimate of appropriation for the Public Health Service, amounting to $5,420,000 for the fiscal year 1943. Of the amount included in the estimate, $5,000,000 will be used by the Public Health Service to undertake directly in defense areas measures to control mosquitoes in connection with the suppression of malaria and to control dog flies near Eglen and Tyndall airfields and a school of flexible gunnery in Florida. The remainder of the estimate, $420,000, will be used to continue a program, for which an allotment from the President's emergency fund has been made, to provide sufficient reserves of blood plasma in two hundred hospitals to meet any wartime contingency caused by enemy action which may necessitate blood transfusions to civilians. H. R. 7042, introduced by Representative Celler, New York, contemplates amendment of the United States Employees' Compensation Act so as to provide compensation for air raid wardens and other civilian defense workers who suffer traumatic injury while engaged in an approved course of training or while performing civilian defense duties. H. R. 7029, introduced by Representative Sparkman, Alabama, proposes numerous amendments to the Soldiers' and Sailors' Civil Relief Act of 1940, to provide further relief for persons in military service. Among other proposed changes, the bill would extend the provisions of the act relating to leases to cover premises occupied for professional, business, agricultural or similar purposes in any case in which (*a*) such lease was executed by or on the behalf of a person who, after the execution of such lease, entered military service and (*b*) the premises so leased have been occupied for such purposes, or for a combination of such purposes, by such person or by him and his dependents.

DISTRICT OF COLUMBIA

Change in Status.—H. R. 6362 has been reported to the House of Representatives, proposing to impose an annual registration requirement on persons licensed to practice the healing art in the District of Columbia. The annual registration fee will be $2. The bill proposes further to amend the healing arts practice act so as to provide that all expenses incident to criminal prosecutions and to supervision and investigation with a view to criminal prosecution shall be paid from the fees collected under the act. Heretofore such expenses have been paid from appropriations in the same manner as the expenses of other criminal prosecutions and supervisory work and investigations incident thereto are paid.

WOMAN'S AUXILIARY

District of Columbia

The Woman's Auxiliary to the Medical Society of the District of Columbia met in the Medical Society Building on January 14 with Mrs. Caryl Burbank, the president, presiding. The guests included Mrs. William L. Walters, president of the Woman's Auxiliary to the Dental Society of the District of Columbia. Miss Mabel T. Boardman of the American Red Cross, Major Julia O. Flikke of the Army Nurses Corps, Miss Sue S. Dauser and Mesdames Ross T. McIntire, Robert E. Hoyt, James Magee, Shelly U. Marietta, S. S. Adams, Hugh S. Cumming, Merritt W. Ireland, Thomas Parran, Walter Reed, Charles Edward Riggs, P. S. Rossiter, William M. Sprigg, Edward R. Stitt, D. P. Hickling and Cline N. Chipman. It is planned to present the glee club of Duke University in a concert in March. The proceeds will be placed in the educational fund. A first aid course under the sponsorship of the American Red Cross is being held in the medical society's library. Fifty-four auxiliary members are enrolled.

Michigan

The Bay County auxiliary held an open meeting on January 7. Dr. John Sheldon of the University of Michigan Hospital, Ann Arbor, gave an illustrated lecture on "The Modern Concepts of Allergic Diseases." Over two hundred persons attended.

The Kent County auxiliary met on January 14. The auxiliary decided to organize a class to take the Red Cross course in home nursing and also voted to invest part of its benevolence fund in seven defense bonds of the $100 denomination. L. E. Murphy of the Federal Bureau of Investigation spoke on the "F. B. I. in Relation to Defense."

Minnesota

The Ramsey County Auxiliary Red Cross unit was organized recently with Mrs. Harvey Beek and Mrs. John Madden in charge. It meets at Hope Church, St. Paul, and makes surgical dressings and bandages and does sewing and knitting.

Texas

The Bexar County auxiliary voted to dispense with all social functions for the year and to give the money used ordinarily for decorations and for tips to the Red Cross fund.

The auxiliary gave a party in the recreation room of the Bexar County Medical Society on January 8 for fifty soldiers and twenty-five student nurses.

Two first aid classes are conducted four times each week for members of the auxiliary. Many members are making surgical dressings.

The Nine Counties (Medina - Uvale - Maverick - Valverde - Edwards - Real - Kinney - Terrell - Zavala) auxiliary was reorganized, Dec. 12, 1941, at Uvalde, with fourteen members and guests present. Mrs. E. W. Coyle, fourth vice president of the state auxiliary, Mrs. Max E. Johnson and Mrs. M. J. Cooper of San Antonio assisted in the reorganization. The following officers were elected: Mrs. E. C. Bourdon, Uvalde, president; Mrs. T. M. Johnson, Del Rio, vice president; Mrs. George E. Merritt, Uvalde, secretary-treasurer, and Mrs. A. P. Utterback, Bracketville, reported. Because of the great distances between homes of members of the auxiliary, the organization will limit activities to war and Red Cross work.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ADDITIONAL MEDICAL COLLEGE NEWS AND ARTICLES APPEAR IN THE STUDENT SECTION, PAGE 299.

ARIZONA

State Medical Meeting at Prescott, May 25-30.—The Arizona State Medical Association will hold its annual meeting at the Hassayampa Hotel in Prescott, May 25-30, under the presidency of Dr. W. Paul Holbrook, Tucson. The host will be the Yavapai County Medical Society. The speakers at the opening session will include the mayor of Prescott and the governor. The preliminary program lists the following speakers, among others:

Dr. Walter Bauer, Boston, Arthritis.
Dr. Noble Wiley Jones, Portland, Ore., Arteriosclerosis.
Dr. Verne C. Hunt, Los Angeles, Lesions of the Stomach.
Dr. Howard P. House, Los Angeles, Diseases Related to the Middle Ear.
Dr. Frank Hinman, San Francisco, Urologic Conditions in Women.
Dr. William A. Boyce, Los Angeles, Anesthesia and Procedure of Safety in Eye Operations.
Dr. Alfred J. Ridges, Salt Lake City, Ethmoiditis; Common Colds.
Dr. Isaac H. Jones, Los Angeles, Ear Conditions in General Medicine.

Most of the program has been divided into symposiums and panel discussions, one of which will be devoted to silicosis and other industrial dust diseases. Drs. Leroy U. Gardner, Saranac Lake, N. Y., Anthony J. Lanza, Washington, D. C., and Donald E. Cummings, B.S., Denver, will be among the speakers.

CONNECTICUT

Industrial Health Forum.—The industrial health and safety committee of the Manufacturers Association of Connecticut, Inc., and the state medical society sponsored their first industrial health forum at the New Haven Lawn Club, New Haven, May 7. One session was devoted to a discussion by personnel managers on employee health problems. Speakers on the program included:

William M. Gafafer, D.Sc., U. S. Public Health Service, Bethesda, Md., Sickness Among Industrial Workers—Bottleneck in the Offense Program.
T. O. Armstrong, industrial relations manager, Westinghouse Electric & Manufacturing Company, Springfield, Mass., Experiences with an Industrial Health Program.
Walter S. Paine, manager, engineering and inspection department, Aetna Life Insurance Company, and the Aetna Casualty and Surety Company, Hartford, Benefits from an Adequate Health Service.
George R. Cowgill, Ph.D., associate professor of physiological chemistry, Yale University School of Medicine, New Haven, Nutrition—Its Value to the War Program.
Dr. George K. Pratt, medical director, Connecticut Society for Mental Hygiene, New Haven, Solving Personal Problems.
Dr. Crit Pharris, industrial hygiene physician, state department of health, Hartford, Meeting the Health Needs of Individual Plants—Minimum Facilities.

Dr. Victor G. Heiser, New York, consultant, committee on healthful working conditions, National Association of Manufacturers, addressed the dinner session on "Industrial Health and the War Problem."

DISTRICT OF COLUMBIA

Doctors Hospital Accepts Group Patients Until End of Contract.—Doctors Hospital, Washington, has reached an agreement with Group Hospitalization, Inc., to admit subscribers until March 31, 1943, when the hospital will withdraw as a full participating institution in the hospitalization plan, according to the Washington *Star*, May 6. The decision was announced after a conference between officials of the two groups. Under the agreement the hospital will accept hospitalization subscribers whether the contract is existing, a renewal or a new one until the expiration of the contract on March 31. The arrangement settles a dispute made public on April 24, when the hospital announced it would not renew its contract as of next March 31 and also refused to care for any new persons signing up in the interim or any whose contracts have expired and been renewed (THE JOURNAL, May 9, p. 195).

FLORIDA

Dr. Munch Convicted on Fraudulent Mail Charge.—Dr. George A. Munch, at one time secretary of the old Florida Eclectic Examining Board, was sentenced on April 9 to serve five years in the penitentiary by Federal Judge Akerman. Newspapers reported that Dr. Munch and Robert F. McFall, Williston attorney, were convicted on charges of using the mails to defraud the Florida medical examining board of fees for licensing physicians. McFall was sentenced to serve three years. Both men, who had been at liberty under bail, were taken into custody. Two naturopaths, who had pleaded nolo contendre to complicity in the scheme to defraud the medical board, were given two year suspended sentences and placed on probation for a two year period. They are Lyle P. Johnson, St. Petersburg, and Julio G. Lopez, Tampa. Johnson was named as a defendant in the indictment with Dr. Munch and McFall. The government charged that Johnson had bought an illegal certificate to practice medicine in Florida from Dr. Munch, through the assistance of McFall. Lopez and Munch were named as co-defendants in another indictment, which charged that Lopez had obtained an illegal medical certificate from Munch. In 1927 Munch stood trial with other defendants on a charge of using the mails to defraud in connection with the sale of medical diplomas and licenses. At that time he was sentenced to the federal prison at Atlanta for a term of five years and to pay a fine of $1,000. Dr. Munch is now 80 years of age. His license to practice medicine in Florida has been revoked and reinstated on various occasions.

GEORGIA

New Professor of Internal Medicine.—Dr. Eugene A. Stead Jr., instructor in medicine, Harvard Medical School, Boston, has been appointed to head the department of internal medicine at Emory University School of Medicine, Atlanta, newspapers reported on March 15. Dr. Stead graduated at Emory in 1932. He will devote his entire time to educational and research activities, it was stated.

Municipal Health Center Building Dedicated.—The city of Savannah dedicated its new health center building, March 25. The three story building was constructed at a cost of $100,000 as a joint city-WPA project and houses all of the official and nonofficial or voluntary health agencies incorporated into the organization known as the Savannah Health Center, directed by the city and county health department. The principal address at the dedication was delivered by Dr. Harry S. Mustard, director of the De Lamar Institute of Public Health, Columbia University, New York. Mayor Thomas Gamble in his address reviewed progress made in the field of health services in Savannah since the appointment of the first health officer in 1790. A commemorative plaque was unveiled as a part of the exercises.

ILLINOIS

New Health Center Building.—Ground was broken for the new Champaign-Urbana Health Center building on April 20. The unit, which will cost $40,000, is the completion of a plan adopted when the district was organized in 1937, it was reported.

Northwestern Alumni Luncheon.—The alumni of Northwestern University Medical School will hold a luncheon during the meeting of the Illinois State Medical Society in Springfield, May 20, at the Christ Church Parish House, 611 East Jackson Street. It will be necessary to register for the luncheon, planned for 12:30.

Personal.—Friends and colleagues of Dr. Marion K. Bowles, Joliet, gave a dinner in her honor recently in recognition of her many years of service to the community. The occasion also marked her retirement from the Joliet Township High School Board, of which she has been a member for nineteen years. She has served as president of the board six times. Dr. Bowles was formerly secretary-treasurer of the Will-Grundy Counties Medical Society. She graduated at Northwestern University Woman's Medical School, Chicago, in 1894.

Chicago

Award Fellowship in Rheumatic Fever.—Dr. Rowine M. Hayes of the Children's Memorial Hospital has been awarded the Morris Fishbein Jr. Fellowship for research on rheumatic fever. The fellowship is financed by a memorial fund, established in honor of the late Morris Fishbein Jr., to carry on research in some phase of cardiovascular disease. The recipient of the fellowship is chosen by the trustees of the Chicago Heart Association. Dr. Hayes graduated at the University of Illinois College of Medicine in 1939. She will pursue her studies at the Children's Memorial Hospital.

Society News.—Among others, Dr. Owen H. Wangensteen, Minneapolis, addressed the Chicago Surgical Society, May 1, on "The Surgical Aspects of Peptic Ulcer."——The Chicago Orthopaedic Society was addressed, April 10, in the Palmer House by Drs. John J. Fahey on "Circulation of the Head of the Femur" and Manley A. Page, "Calcaneal Fractures Involving Articular Surfaces."

Dr. Oliver-Gonzalez Wins Ricketts Prize.—Jose Oliver-Gonzalez, Ph.D., Mr. and Mrs. Frank Logan fellow in bacteriology, department of bacteriology, Division of Biological Sciences, University of Chicago, has been awarded the Howard Taylor Ricketts Prize for his research on "Dual Antibody Basis of Acquired Immunity in Trichinosis." Dr. Oliver-Gonzalez is a native of Puerto Rico. He received his B.A. degree at the University of Puerto Rico in 1938 and his M.A. and Ph.D. degrees at the University of Chicago in 1939 and 1941, respectively. The recipient of the Ricketts Prize is announced every year on May 3, the anniversary of Dr. Ricketts' death.

Special Meeting of Institute of Medicine.—The Institute of Medicine of Chicago will hold a special meeting at the Palmer House, May 22, under the chairmanship of Dr. Andrew C. Ivy. The speakers will be Drs. Arnold Lazarow, winner of the 1941 Joseph A. Capps Prize for medical research, on "Particulate Glycogen: A Submicroscopic Component of the Guinea Pig Liver Cell; Its Significance in Glycogen Storage and the Regulation of Blood Sugar"; Paul H. Holinger, "Kodachrome Visualization of the Physiology and Pathology of the Bronchi and Esophagus," and Jay M. Garner, Winnetka, Ill., and Jerrold Peerman Nesselrod, Evanston, Ill., "Interesting Proctoscopic Observations in Color."

INDIANA

New Officers of Tri-State Association.—Dr. Howard H. Cummings, Ann Arbor, Mich., was elected president of the Northern Tri-State Medical Association at its annual meeting in Fort Wayne, April 7, succeeding Dr. Lyman T. Rawles, Fort Wayne. Dr. E. Benjamin Gillette, Toledo, Ohio, was reelected vice president, Dr. Floyd R. N. Carter, South Bend, was reelected secretary and Dr. Oscar P. Klatz, Findlay, Ohio, was chosen treasurer.

Election of State Medical Board.—Dr. Hobart C. Ruddick, Evansville, was elected president of the state board of medical examiners at the recent annual meeting, succeeding Dr. William C. Moore, Muncie, who was elected secretary. Dr. Jesse W. Bowers, Fort Wayne, who had been secretary, resigned from the board to become medical commander at Fort Benjamin Harrison, newspapers reported. Other officers of the board include Dr. Norris E. Harold, Indianapolis, vice president, and C. B. Blakeslee, D.O., Indianapolis, treasurer.

Postgraduate Courses in Pediatrics.—A series of lectures on pediatrics, sponsored by the Perry County Medical Society in cooperation with the bureau of maternal and child health of the Indiana State Board of Health, opened in Cannelton on April 29 to continue each week until June 10. Dr. Walter R. Springstun, Evansville, is the instructor. Two courses in obstetrics, consisting of four lectures each, opened in Plymouth, April 20, and in Washington, April 28, under the auspices of the Marshall and Tri-County medical societies, respectively. Dr. Carl P. Huber, associate professor of obstetrics, Indiana University School of Medicine, Indianapolis, is giving the lectures.

IOWA

State Medical Election.—Dr. Lee R. Woodward, Mason City, was chosen president-elect of the Iowa State Medical Society at the recent annual session in Des Moines, and Dr. Frank P. Winkler, Sibley, was installed as president. Other officers include Drs. Walter A. Sternberg, Mount Pleasant, and Walter D. Abbott, Des Moines, vice presidents, and Robert L. Parker, Des Moines, secretary-treasurer. Des Moines was selected as the place for the 1943 annual session.

Annual Renewal Fees Due Before June 1.—All licenses to practice medicine and surgery in Iowa expire annually on June 30. To renew such a license a licentiate must make a written application to the state department of health before June 1, enclosing the renewal fee of $1. If a license expires by reason of the licentiate's failure to renew it, it can be reinstated without reexamination only on the recommendation of the state department of health and the payment of the overdue fees.

LOUISIANA

Meeting of Urologists.—The fourth annual session of the Louisiana Urological Society was held at the St. Charles Hotel, New Orleans, April 30, under the presidency of Dr. Henry W. E. Walther, New Orleans. The speakers included:

Dr. Harry C. Knight, New Orleans, passed assistant surgeon, U. S. Public Health Service, Disease Control During the War Effort.
Dr. Donald C. Malcolm, Clifton, Kan., major, U. S. Army, Report of Urologic Section of a General Hospital.
Dr. James E. Gill, Washington, D. C., captain, U. S. Navy, Urology in the Navy.
Dr. Alfred I. Folsom, Dallas, Texas, The Female Obstructing Prostate.
Dr. Ansel M. Caine, New Orleans, Modern Trends in Anesthesia as Applied to Transurethral Procedures.
Dr. Pierre Jorda Kahle, New Orleans, Treatment of Prostatic Carcinoma and Metastases with Stilbestrol.
Dr. Henry J. Lindner, New Orleans, The Effect of Castration in Metastatic Carcinoma of the Prostate.
Dr. Robert F. Sharp, New Orleans, Aneurysm of the Renal Artery.
Dr. John G. Menville, New Orleans, Gas Formation in Renal Abscess.

MINNESOTA

Society News.—Dr. William P. Sadler, Minneapolis, spoke on "Ectopic Pregnancy" before the Minnesota Academy of Medicine recently.——The Minnesota Pathological Society was addressed, April 7, in Minneapolis, by Dr. Alvin F. Coburn, New York, on "Role of Hemolytic Streptococcus in the Pathogenesis of Rheumatic Fever."——Dr. Thomas Addis, San Francisco, gave a Mayo Foundation Lecture recently in Rochester on "The Treatment of Glomerulonephritis."

Olmsted County Accredited in Tuberculosis Control.—Olmsted County has been awarded a certificate of accreditation by the Minnesota State Department of Health and the Minnesota State Medical Association in their joint program to accredit counties showing a tuberculosis mortality rate of less than 10 per hundred thousand of population and a record of less than 15 per cent reactors to the tuberculin test among the state's high school seniors. Olmsted County was the second in the state to achieve this honor, Lincoln County having been the first. Special ceremonies in Rochester will mark the presentation of the certificate on May 22 with Dr. Henry F. Helmholz, Rochester, president of the Olmsted County Public Health Association, presiding. Dr. Chester A. Stewart, professor of pediatrics and director of the department, Louisiana State University School of Medicine, New Orleans, will be the principal speaker.

NEBRASKA

New Public Health Personnel.—Dr. Vernon M. Winkle, Norfolk, has been named director of health unit number 1 covering Scottsbluff, Morrill and Banner counties, and temporary director of health, unit number 3, comprising Lincoln and Keith counties. Dr. Reuben Mutnick, New York, has been named director of the Dodge-Saunders defense area, according to *Better Health*. Dr. William E. Holmes, Omaha, has been added to the state health department staff as medical health officer but at the time of this report had not been assigned to a unit.

NEW JERSEY

Personal.—Dr. Henry A. Davidson, editor of the *Journal of the Medical Society of New Jersey*, Trenton, has been ordered to active duty at the Army Medical Center in Washington, D. C.——Dr. Edward J. Ill, Newark, has been made a life emeritus member of the state publication committee of the Medical Society of New Jersey; he was first a member for one year beginning in July 1906 and has been continuously a member since July 1910.

NEW YORK

Personal.—Dr. Augustus J. Hambrook, Troy, has been appointed medical consultant in the Troy department of public welfare, a new position provided for in the 1942 city budget, effective January 1.——Dr. Arthur E. Soper, Brentwood, has been named superintendent of the Kings Park State Hospital, Kings Park; he has been on the staff of the Pilgrim State Hospital, Brentwood, since 1932.

Food Poisoning Traced.—A recent outbreak of food poisoning in an upstate city has been attributed to hollandaise sauce in which large numbers of hemolytic Staphylococcus aureus were found. The outbreak was traced to a restaurant. About five hours after ingestion of the meal, the illnesses were characterized by profuse vomiting, purging and prostration. There were no deaths.

Public Health Laboratories Meeting.—The twenty-sixth annual meeting of the New York State Association of Public Health Laboratories will be held in Schenectady, May 18, under the presidency of Dr. Francis F. Harrison, Cooperstown. Among the speakers will be Florence M. Varley and Dr. Frederick R. Weedon, Jamestown, on "The Use of Frozen Guinea Pig Serum in the Complement Fixation Test for Syphilis"; Dr. Dorothy B. Chamberlin and Dr. William Kaufmann, Albany, "Meconium Ileus, a Clinicopathological Syndrome of Newborn Infants"; Dr. Francis W. Porro, Ogdensburg, "Trichinosis," and Dr. Alan R. Moritz, Boston, "Integration of Medicolegal Pathology with Public Health Work."

New York City

Dr. Geiling to Give Harvey Lecture.—Dr. Eugene M. K. Geiling, professor of pharmacology, University of Chicago School of Medicine, will deliver the eighth and last Harvey Society Lecture of the current series at the New York Academy of Medicine on May 21. His subject will be "The Comparative Anatomy and Pharmacology of the Pituitary Body."

Exhibit Traces History of Hospital.—Special ceremonies on April 29 marked the opening of an exhibit at Mount Sinai Hospital which shows the history of the institution since 1852. The exhibit is a feature of the ninetieth anniversary celebration of the hospital and consists of modern scientific displays, old time instruments and mementoes of medical poineering and of service in United States wars. The main section of the exhibit will depict the development of the hospital against the background of contemporary, general and scientific history. The hospital has planned a year of celebration of its founding, including special lectures and other events.

Jean Perrin Is Dead.—Jean Perrin, French physicist, winner of the Nobel Prize in 1926 and former president of the French Academy of Science, died April 17 in Mount Sinai Hospital, aged 71. Dr. Perrin, who was a member of the faculty of Paris University for many years, came to this country a few months ago. He had retired before the war but was in Paris when the war started. According to the New York *Times*, through the cooperation of the faculty of Wilson College, Chambersburg, Pa., he was able to come here. The Nobel Prize in physics was awarded to Dr. Perrin for work on brownian movement kinetics, which dealt with so-called brownian particles. He was also honored for his work on the role of radiation in chemical reactions. He was educated at the Ecole Normale, Paris. He was founder of the department of physicochemistry at the Sorbonne and in 1938 was named president of the high committee for scientific research by the French government. Dr. Perrin was living with his son Francis Perrin, visiting professor of physics and mathematics at Columbia University.

Violations of Marriage Examination Law.—On April 23 the New York *Times* reported that an investigation of irregularities in the marriage license bureau has disclosed indications that physicians are violating the law requiring a premarital examination by giving the couples only blood tests and not making physical examinations. William B. Herlands, commissioner of investigation, recommended that the department of health and the "organized medical profession" immediately undertake "appropriate educational and disciplinary steps necessary for the proper enforcement of the premedical examination law," the *Times* stated. Two employees of the marriage license bureau and one in the health department were ordered suspended as a result of the investigation. Herlands' report indicated instances of alleged "steering" of couples to certain physicians in the neighborhood of the bureau and the department. The report also said the inquiry has disclosed the possibility of "blood tests by proxy" because, it alleged, the physician named had accepted a blood specimen sent from another city as that of a woman and given her a medical certificate.

OHIO

Emeritus Professors.—The title of professor emeritus was recently conferred on Dr. Mark A. Brown, professor of medicine, University of Cincinnati College of Medicine, Cincinnati, and Dr. Emerson A. North, professor of psychiatry. Dr. Brown has been professor at the school since 1900. Dr. North's retirement was noted in THE JOURNAL, January 17, page 240.

Gifts for Research.—Funds totaling more than $30,000 for research at the University of Cincinnati College of Medicine, Cincinnati, were accepted at the March meeting of the board. These gifts included $9,500 from an anonymous donor for the Heart Station Fund in the department of internal medicine, $3,500 from an anonymous donor to the Porter Fund in Obstetrics, $2,400 from the National Advisory Cancer Council to the department of surgery "to improve the present method of diagnosis and treatment of cancer," $1,200 from the Lederle Laboratories, Inc., to the department of biologic chemistry and $1,500 from an anonymous donor to the Craig Yeiser Fund in the department of preventive medicine.

OREGON

Refresher Courses in Pediatrics and Obstetrics.—The Oregon State Medical Society and the state board of health are cooperating in a series of lectures on pediatrics and obstetrics. The program will be offered in the form of panel discussions by Oregon physicians. Dr. Henry Close Hesseltine, Chicago, assistant professor of obstetrics and gynecology, University of Chicago School of Medicine, will be the guest lecturer. The series was given on May 11 at Ontario, May 12 Baker, May 13 Pendleton, May 14 The Dalles, May 15 Bend and will be given on May 18 at Lakeview, May 19 Klamath Falls, May 20 Medford, May 21 Grants Pass, May 22 Marshfield, May 25 Astoria, May 26 Portland, May 27 Salem and May 28 Eugene.

PENNSYLVANIA

Industrial Hygiene Division.—Dr. Joseph Shilen, Pittsburgh, has been appointed head of the division of industrial hygiene of the state department of health, Harrisburg. He succeeds Dr. William B. Fulton, Harrisburg, who was appointed chief of the division of health in the U. S. Bureau of Mines. Dr. Shilen graduated at George Washington University School of Medicine, Washington, D. C., in 1916.

Society News.—Dr. Michael M. Wolfe, Philadelphia, addressed the Luzerne County Medical Society, Wilkes-Barre, March 18, on "Indications for Plastic Surgery."——Dr. Adam C. Williamson, Pittsburgh, addressed the Mercer County Medical Society at Grove City, April 7, on "General Problems of Obstetrics in General Practice."——Dr. Herbert T. Kelly, Philadelphia, addressed the Lancaster City and County Medical Society in Lancaster, March 4, on "The Modern Science of Nutrition and Nutritional Deficiency."——The Lebanon County Medical Society was addressed in Lebanon recently by Dr. Franklin L. Payne, Philadelphia, on "Significance of Abnormal Vaginal Bleeding."——Lloyd M. Jones, professor of physical education, Pennsylvania State College, State College, addressed the Centre County Medical Society, Bellefonte, recently on physical fitness.

SOUTH CAROLINA

State Medical Meeting in Columbia.—The ninety-fourth annual meeting of the South Carolina Medical Association will be held at the Columbia Hotel, Columbia, May 19-21, under the presidency of Dr. George M. Truluck, Orangeburg. The preliminary program lists the following speakers:

Dr. Vivian P. Patterson, Chester, General Practice in China.
Dr. William A. Smith, Charleston, Disseminated Circumscribed Pulmonary Deposits.
Dr. William L. Pressly, Due West, The Procurement and Assignment Service.
Dr. William Halsey Barker, Baltimore, The Sulfonamides.
Col. David N. Walker Grant, U. S. Army Medical Corps, Office Chief of Air Corps, Washington, D. C., Military Aviation.
Dr. Walter R. Mead, Florence, Diagnostic Significance of Various Types of Pain in the Back.
Dr. Dargan S. Pope Jr., and William A. Hart, Columbia, Problems of a Prenatal Clinic.
Dr. Madison Hines Roberts, Atlanta, Ga., Septic Meningitis with Special Reference to Treatment of Influenza Meningitis.
Dr. John J. Moorhead, New York, Experiences at Pearl Harbor.

Mr. Joseph B. Hyde, Charleston, will be the exchange speaker of the South Carolina Pharmaceutical Association. The annual banquet will be addressed by Brig. Gen. Lewis B. Hershey, director, Selective Service System, Washington, D. C., on Wednesday evening. The alumni luncheon of the Medical College of the State of South Carolina, Charleston, will be held on Wednesday afternoon at the Wade Hampton Hotel.

TENNESSEE

Kellogg Foundation Grant to Meharry College.—A grant of $250,000 has been given to Meharry Medical College, Nashville, by the W. K. Kellogg Foundation, Battle Creek, Mich., to finance an educational program in medicine, dentistry and nursing, newspapers announced on April 18. Fifty thousand dollars will be made available annually for five years.

Funds Approved for Hospital Construction.—The last general assembly provided a bond issue of $500,000, the proceeds of which are to be used for the construction of a tuberculosis hospital in Tennessee. The act providing the issue also

authorizes the creation of a commission to make application for a grant of funds from the federal government to supplement the local funds and to select the location for the hospital.

Changes in Health Personnel.—Dr. Vernon W. Foster, Savannah, Ga., has been placed in charge of the newly created health unit of Henry County. Dr. Foster is on loan from the U. S. Public Health Service. — Dr. Horace M. Roberson, health director for Bledsoe and Sequatchie counties, has been named to a similar position in Rhea and Meigs counties, succeeding Dr. Hollis C. Miles, Dayton, who resigned to return to private practice in Cincinnati, it is reported.——Dr. Loyal D. Farragut, Jackson, has resigned as director of the Madison County Health Unit to enter army service.

GENERAL

Dinner for Columbia Alumni at Atlantic City.—A dinner to be given by the alumni of Columbia University College of Physicians and Surgeons will be held Wednesday, June 10, at 7:30 p. m. at the Hotel Claridge, Atlantic City, rather than at 9 p. m. as was announced in THE JOURNAL, May 2, page 44.

Tufts Alumni Meeting.—The secretary of the Tufts Medical Alumni Association, Dr. Harry Blotner, Boston, writes that the Tufts medical alumni will hold their luncheon meeting at the Ambassador Hotel in Atlantic City, Wednesday, June 10, during the period of the annual session of the American Medical Association.

Changes in Strength in Mercurial Ointments. — The Committee of Revision of the Pharmacopeia of the United States of America announces that certain changes have been made in the strengths of U. S. P. mild mercurial ointment (blue ointment) and U. S. P. ammoniated mercury ointment (white precipitate ointment). The change was made to conserve limited stocks of mercury on purely therapeutic grounds and was necessitated by war emergency conditions.

New Bulletin on Science.—The executive committee of the American Association for the Advancement of Science has authorized the publication of an eight page monthly, *A. A. A. S. Bulletin*, to be edited by the permanent secretary Forest R. Moulton, Ph.D., Washington, D. C. The new bulletin will be sent to each member of the association, the subscription price to be included in the annual dues. The association announces that the meeting planned during the week of June 22 at Ann Arbor has been canceled. However, the group will meet in New York on December 28.

Officers of National Health Council. — Dr. George S. Stevenson, medical director of the National Committee for Mental Hygiene, New York, has been elected president of the National Health Council to succeed Dr. Kendall Emerson, managing director of the National Tuberculosis Association, who becomes vice president and chairman of the executive committee. Other officers elected are Dr. William F. Snow, general director of the American Social Hygiene Association, treasurer, and Mrs. Eleanor Brown Merrill, executive director of the National Society for the Prevention of Blindness, secretary.

Accidental Deaths Increase.—Accidental deaths reported to workmen's compensation commissions in twenty-six principal industrial states totaled 8,381 in 1941 as compared with 7,732 in 1940. The largest increase was reported in Connecticut with 93 deaths in 1941 against 49 in 1940. Increases ranged downward from the Connecticut figures to 2 per cent for both Illinois and Minnesota. New York, one of the outstanding industrial states, recorded a 6 per cent drop. Other state commissions which received fewer reports of accidental deaths in 1941 were Georgia with a 7 per cent decrease, Vermont with a 14 per cent drop and West Virginia with a 15 per cent decrease.

Yellow Fever Volunteer Dies.—John H. Andrus, who received congressional recognition for volunteering in the yellow fever experiments in Cuba in 1900-1901, died in the Naval Hospital, Philadelphia, aged 62. Mr. Andrus was one of a group of volunteers for experiments carried out under the late Drs. Walter Reed, James Carroll, Jesse W. Lazear and Aristides Agramonte. Mr. Andrus was a private in the hospital corps. He volunteered for the experiments and was infected with yellow fever at Camp Lazear by the injection of blood from a yellow fever patient. He became sick on Jan. 28, 1901 and was discharged on April 24, 1902. Congress in 1929 awarded him a gold medal and authorized a pension of $125 a month.

Academy of Tuberculosis Physicians.—The annual session of the American Academy of Tuberculosis Physicians will be held at the Hotel Dennis, Atlantic City, June 8-9, under the presidency of Dr. Oscar S. Levin, New York. The program will include the following speakers:

Dr. Leo L. J. Hardt, Chicago, Gastroscopic Findings in Far Advanced Pulmonary Tuberculosis.
Dr. Morris Moore, St. Louis, The Chorioallantoic Membrane of Chick Embryos and Its Response to Inoculation with Some Mycobacteria.
Dr. Samuel J. Hurwitt, San Francisco, Use of Gold Needle in Artificial Pneumothorax.
Dr. Carl W. Tempel, major, U. S. Army, Washington, D. C., Pneumoperitoneum: Its Place in Collapse Therapy.
Dr. Zoltan Galambos, Chicago, Antituberculotic Immune Substances in the Cellular Elements of the Blood in Arrested Pulmonary Tuberculosis.
Dr. Jacob Werne, New York, A Study of the Frequency of Tuberculosis in a Population Dying of Violence.

American Psychopathological Association.—The thirty-second annual meeting of the American Psychopathological Association will be held at the Hotel Statler, Boston, May 17-18, under the presidency of Dr. Roscoe W. Hall, Washington, D. C. Included among the speakers will be:

Dr. Lowell S. Selling, Detroit, Psychopathology and Nutrition.
Dr. Edward J. Kempf, New York, The Significance of the Plastic Bisexuality of Man for the Medical and Social Sciences.
Dr. Helen Flanders Dunbar, New York, Personality Types Associated with Cardiovascular, Diabetic and Accident Syndromes.
Dr. Bernard C. Glueck Jr., Ossining, N. Y., Psychopathological Reactions and Electric Shock Therapy.

The association will hold two joint sessions with the American Psychiatric Association on "Morale and Military Psychiatry" and "Psychiatry and the U. S. Navy." The annual dinner will be addressed by Earnest A. Hooton, Ph.D., professor of anthropology, Harvard University, Cambridge.

Fatal Bicycle Accidents.—The Metropolitan Life Insurance Company has reported that about 1,100 persons were killed in bicycle accidents in 1941, nearly one fourth more than in 1940. About 900 lives have been lost through these accidents annually since 1936. In 1932, before the strong revival of recreational bicycling, there were only about 450 deaths. Of the 1,100 fatalities to cyclists last year, more than 900 resulted from injuries sustained in collisions with automobiles. Others were charged to falling off the bicycle, running into trees, curbs or other fixed objects and running into street cars. A number of pedestrians also were struck and fatally injured by bicycles. Among adult male insured persons between the ages of 20 and 64, the death rate in bicycle collisions with automobiles of 6.3 per million persons in 1941 was the highest in the seventeen years on which data are available. Each year boys in the age group of 10 to 19 are the most frequent victims. In the years 1936 to 1941 the annual death rate of bicycle-automobile collisions was 32.5 of insured boys from the ages of 10 to 19. Bicycle fatalities were relatively infrequent among insured girls and women.

Ear, Nose and Throat Meeting.—The forty-eighth annual session of the American Laryngological, Rhinological and Otological Society, Inc., will be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., June 1-3, under the presidency of Dr. James A. Babbitt, Philadelphia. Among the speakers will be:

Dr. George M. Coates, Philadelphia, The Nasopharynx.
Dr. Paul A. Campbell, major, medical corps, Randolph Field, Texas, Otolaryngologic Problems of Aviation in World War II.
Dr. Albert C. Furstenberg, Ann Arbor, Mich., Neurologic Lesions Which Influence the Sense of Smell: A Clinical and Pathologic Study.
Dr. Carl H. McCaskey, Indianapolis, Chronic Nonspecific Recurring Parotitis.
Dr. Harrington B. Graham, San Francisco, Keratosis of the Larynx.
Drs. Louis H. Clerf and Francis J. Braceland, Philadelphia, Functional Aphonia.
Dr. Gordon B. New, Rochester, Minn., The Treatment of Congenital Cysts of the Larynx.
Drs. Samuel J. Crowe and John E. Bordley, Baltimore, The Use of the Sulfonamide Drugs and Gramicidin in Otolaryngology.
Dr. Edmund P. Fowler, New York, Control of Head Noises: Their Illusions of Loudness and Timbre.

War Production Fund to Conserve Manpower. — A group of leading corporation executives has organized the War Production Fund to Conserve Manpower under the auspices of the National Safety Council. According to a release, the War Production Fund resulted from a proclamation of President Roosevelt calling on the National Safety Council to mobilize the nation's volunteer resources against a rising accident toll that last year claimed the lives of 101,500 persons, permanently disabled 350,000, injured 3,750,000 workers and deprived industry of 460,000,000 man-days of labor. Studies made by the National Safety Council indicate that industry was deprived by accidents of 10 per cent more man-days last year than in 1940, and the first month of this year showed a continuing rise as compared with the corresponding month of

1941. In twelve states the death toll from occupational accidents alone showed increases in 1941 ranging from 25 to 77 per cent. The new setup would work toward the installation of safety programs in many of the 171,000 industrial plants now lacking them and the nation's 15,000,000 industrial workers would be educated to safety. It is estimated that the expanded safety program will cost 5 million dollars and the War Production Fund has undertaken the responsibility of financing the project through enlisting the support of the nation's major industrial and business corporations. Mr. William A. Irvin, New York, director of the board of the U. S. Steel Corporation, is chairman of the War Production Fund.

American Rheumatism Association. — The ninth annual meeting of the American Rheumatism Association will be held at Chalfonte-Haddon Hall, Atlantic City, N. J., June 8, under the presidency of Dr. Loring T. Swaim, Boston. The following program will be presented:

Drs. Paul L. Boisvert, New Haven, Conn., James D. Trask, New Haven, Martin Henry Dawson and Francis F. Schwentker, New York, Epidemic Rheumatic Fever.
Capt. Ruskin M. Lhamon, U. S. Navy, Lieut. Robert W. Huntington Jr., U. S. Navy Reserve, Washington, D. C., Drs. Stafford M. Wheeler and Thomas Duckett Jones, Boston, An Epidemic of Hemolytic Streptococcus Infection and Rheumatic Fever Among Naval Trainees.
Dr. Granville A. Bennett, Boston, Comparison of the Pathology of Rheumatic Fever and Rheumatoid Arthritis.
Dr. Theodore B. Bayles, Boston, Rheumatoid Arthritis and Rheumatic Heart Disease in a Series of Autopsied Cases.
Dr. Warren T. Vaughan, Richmond, Va., Food Allergy as a Possible Factor in Subacute Recurrent Arthritis.
Drs. Alfred O. Ludwig, Charles L. Short and Walter Bauer, Boston, The Spinal Fluid Protein in Rheumatoid Arthritis.
Drs. Readie Garfield Snyder, Willard Haywood Squires, John Wilfrid Forster and Cornelius Horace Traeger, New York, The Treatment of Arthritis with an Agent Containing Massive Doses of Vitamin D.
Dr. John G. Kuhns, Boston, The Treatment of Arthritic Contractures of the Knee.
Drs. Edward F. Rosenberg, Archie H. Baggenstoss and Philip S. Hench, Rochester, Minn., An Analysis of the Manner of Death Among Thirty Patients with Rheumatoid Arthritis.
Dr. Charles L. Steinberg, Rochester, N. Y., The Tocopherols (Vitamin E) in the Treatment of Primary Fibrositis.

The annual dinner will be addressed by Brig. Gen. Charles C. Hillman, Washington, D. C.

Meeting of Chest Physicians.—The eighth annual meeting of the American College of Chest Physicians will be held at the Hotel Dennis, Atlantic City, June 6-8, under the presidency of Dr. Benjamin Goldberg, Chicago. Among the speakers will be:

Drs. Raul F. Vaccarezza and Alvaro E. Bence, Buenos Aires, Argentina, Results Obtained from the Examination of Partitioned Lung Areas.
Dr. William A. Hudson, Detroit, Management of Pulmonary Cavities.
Dr. Hans E. Schiffbauer, Los Angeles, Traumatic Rupture of the Diaphragm Simulating Pulmonary Tuberculosis: Transpleural Repair.
Drs. Chevalier L. Jackson and John Franklin Huber, Philadelphia, Applied Anatomy of the Tracheobronchial Tree and a System of Bronchial Nomenclature.
Dr. Robert W. Keeton, Chicago, Adequacy of Diabetic Management in the Presence of Infection.
Dr. Oscar Auerbach, New York, Pulmonary Tuberculosis Secondary to the Rupture of Cold Abscesses into the Lung.
Dr. Herman L. Kretschmer, Chicago, Diagnosis and Treatment of Renal Tuberculosis.

Military affairs will be discussed on June 7 by:

Brig. Gen. Charles C. Hillman, Washington, D. C., Tuberculosis in the Army.
Commander Robert E. Duncan, Washington, D. C., Tuberculosis in the Navy.
Dr. Roy A. Wolford, chief of the tuberculosis division, U. S. Veterans Bureau, Washington, D. C., Present Status of the Tuberculosis Problems in the U. S. Veterans Bureau.
Dr. Herman E. Hilleboe, passed assistant surgeon, U. S. Public Health Service, Washington, D. C., Tuberculosis Control in National Defense.
Dr. Esmond R. Long, Philadelphia, Relationship Between the National Research Council and Our Four Medical Services.

A joint session with the American Broncho-Esophagological Association will be held on June 8 with the following speakers: Drs. Paul H. Holinger, Chicago, on "Kodachrome Visualization of the Physiology and Pathology of the Tracheobronchial Tree"; Louis H. Clerf and Carl J. Bucher, Philadelphia, "Adenoma (Mixed Tumor of the Bronchus)"; Ralph C. Matson, Portland, Ore., "Bronchoscopic Aids in Chest Surgery" and Joseph W. Peabody, Washington, D. C., "Bronchoscopic Aids in Medical Conditions Within the Chest."

LATIN AMERICA

New Journal on Hygiene.—The *Boletin del Departamento de Higiene de la Provincia de Córdoba* has recently made its appearance. The first issues include original articles, excerpts from Brazilian lectures, a section on laws and miscellaneous articles covering hygiene and public health in Brazil. The headquarters of the new publication are at Boulevard Junin 507, Córdoba, Argentina.

Honor Memory of Havana Physician. — On Sept. 22, 1941 a tablet was unveiled to honor the memory of the late Dr. Raimundo de Castro y Allo, professor of clinical medicine at the Faculty of Medicine of the University of Havana for twenty-five years. He was the head of the clinic of Hospital Mercedes for several years, president of various medical societies, delegate to several medical congresses and author of numerous articles and books. He died in 1902.

FOREIGN

British Medical Journal Comments on Paper Restriction.—The *British Medical Journal*, in a recent editorial comment, discusses the progressive limitation of the paper supply in relation to the gradually reduced size of the *Journal*. The editorial points out that the Scandinavian sources of material for paper making were cut off in April 1940. The continued drastic curtailment in paper rations will be met in the future by the printing of fewer pages and the use of smaller type. It is pointed out that "since this is a professional organ of information and opinion, owned by the members and not run for profit, the advertisement pages have to fare far worse under the ax than the editorial pages." The editorial reads in part as follows:

> The British Medical Association, unlike the proprietors of all newspapers and of most periodicals, cannot compensate for dwindling paper supplies by materially cutting down circulation, because it is bound to send a copy of its *Journal* every week to each of the 40,000 members. Every effort will be made to economize space and to secure an adequate amount of paper, but readers and contributors must help us to make the best of a bad situation and be prepared for disappointments. The generous space given to correspondence will have to be curtailed, which means fewer and shorter letters. Every one in these days is putting up with things he never thought to endure, and we look confidently to members of the B. M. A. to exercise forbearance. As for conciseness, it has become a major virtue in all who put pen to paper.

Government Services

Appointments in Hospital Service

Dr. Dean A. Clark, New York, U. S. Public Health Service, has been appointed head of the hospital section of the medical division of the Office of Civilian Defense and also head of the new emergency medical section in the public health service, which will administer the hospital program jointly with the Office of Civilian Defense. *Modern Hospital* further reports that Mr. Harry N. Hooper, superintendent of Cincinnati General Hospital, has been granted a leave of absence to serve as consultant in hospital administration to the medical division.

Dr. Turner Assigned as Chief of Venereal Disease Control

Dr. Thomas B. Turner, professor of bacteriology, Johns Hopkins University School of Hygiene and Public Health, Baltimore, and lieutenant colonel in the medical reserve corps of the U. S. Army, has been called into active service as chief of the subdivision of venereal disease control in the surgeon general's office. He has been in charge of the division of venereal disease control at the school of hygiene and public health, where he was assigned as a staff member of the International Health Division of the Rockefeller Foundation. He graduated at the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1925. About 100 specially trained venereal disease control officers are being assigned as assistant to the surgeon of each army divis[illegible] each corps area and department, to each army headq[illegible] to general headquarters and to each camp of 20,000 or more troops to carry forward the army's comprehensive program to reduce loss of the army strength through venereal disease. In the civilian communities the new officers will cooperate with all agencies concerned with the control of these diseases to insure the effective repression of prostitution and the adequate quarantine and treatment of infected civilians as a measure to prevent infection of soldiers. Cooperation will be carried out with the Bureau of Medicine and Surgery of the U. S. Navy, the Social Protection Section and the U. S. Public Health Service of the Federal Security Agency, the federal bureau of investigation, health and law enforcement agencies of states and smaller political units, and certain unofficial agencies such as the American Social Hygiene Association, according to *Social Hygiene News*.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 28, 1942.

More Men, Women and Physicians Called Up

The operation of the national service acts has been extended to men from the age of 18 to those who have not reached 46 and to women who have reached the age of 21 but not that of 31. Previously the higher age limit for men was 41. Women are joining in the war effort to such an extent that already five million are registered. They are employed in services auxiliary to the fighting forces, in munition works, in nursing and welfare work, in civil defense and in other services required in the war effort. Girls of 16 and 17 are shortly to be registered under a youth scheme and those of 18 and 19 for purposes of record in order to complete the picture of our woman power, which is being mobilized on a scale hitherto unparalleled.

The women of the country, as well as the men, are now conscripted. The first medical examination of women conscripts has been held at four London centers. The women were all in the 20-21 age group. Most of them will be enrolled for auxiliary military service. They were placed in four grades: 1. Fit in every way. 2. Fit, but not for strenuous work. 3. Not fit for uniformed service but liable for civilian work of national importance. 4. Completely unfit. Most of the girls were placed in the first two grades. They were examined by three physicians (two men and one woman). Each had the right to claim examination by a woman only, but this was seldom done. The medical examination was thorough.

It is found necessary to extend the field for the recruitment of physicians and dentists, additional numbers of which are required in the armed forces. The arrangements which exist for their recruitment below the age of 41 are to be extended to 46. Each case will be reviewed by the Central Medical War Committee or the Dental War Committee and their local committees, which take into account the needs of both armed forces and the civil population.

Precautions Against Typhus Fever

On the continent of Europe typhus has proved a war scourge but so far has not spread to Britain. Elaborate precautions, however, are being taken. At the suggestion of the Ministry of Health the authorities in London have arranged the measures to be taken in case of an outbreak. The London County Council has provided for the use of one of its hospitals. Five London southwestern boroughs have drawn up a joint plan. As a preliminary twelve members of the Kensington public health staff have been immunized against typhus, protective clothing has been provided and they are being trained in dealing with clothing from typhus patients and with contacts. Kensington already has the plant for the delousing of furniture and clothing. If a case of typhus is diagnosed the health officer will immediately order the necessary measures. A van manned by a team wearing protective clothing will go to the house and remove bedding and clothing in stout bags, and the premises will be fumigated. Contacts will be deloused and taken in special transport to a delousing station. To prevent the introduction of typhus into the country a close watch is kept by health officers at ports and airports. Special mobile diagnostic and sanitary teams are being trained and organized. Arrangements for confirmatory diagnosis by experts have been made. Plans similar to those described have been made by other local health authorities for prompt isolation, hospital treatment and disinfestation. Finally there is a general intensification of delousing and cleansing of verminous conditions, for which local authorities have been given additional powers.

The Problem of Feeding Europe After the War

Dr. Geoffrey Bourne of the University Laboratory, Oxford, discusses in a recent issue of *Nature* the question What foods should be held ready to rush to Europe after the war? All the occupied countries, as well as the belligerents, are rationed. In some the bread ration is high: 80 ounces a week in Germany and 85 ounces in Denmark. In others the ration is low: 50 ounces in Italy, 55 in Belgium, 30 in Greece. Starvation must occur unless the deficiency is made good by other foods. Thirty ounces of bread a week provides only 300 calories a day. If there are not other foods to supply the calories, the position is serious. One way is by fat and potatoes. But in most of the countries fats are rationed and in some potatoes. In Belgium and Italy the fat ration is very low: 3½ ounces a week; in France it is 4 ounces. In view of the deficiency of calories, the French were urged to drink more wine. But they did this to such effect that wine is now rationed. The following estimates have been made of the number of calories per head available daily: Germany 2,900, Norway 2,500, Italy 2,400, Bohemia 2,300, unoccupied France 2,160, occupied France 2,100, the Netherlands 2,250, Belgium and Luxembourg 1,870. Figures cannot be given for Greece and Poland, but the conditions are known to be very bad. The foregoing figures are probably optimistic.

Food also is deficient in quality. There is deficiency of protein and vitamins, which will probably have a serious effect on growing children. The decrease in the consumption of milk, cheese and butter means a reduction in the supply of vitamins A and D and riboflavin. Restriction of fruit means deficiency of vitamin C unless compensated by vegetables. Norwegians, Greeks and Poles are probably suffering from a mild form of scurvy. At the end of the war Europe will probably suffer from an absolute lack of food and deficiency of first class protein, vitamins A, C and D and calcium.

Dr. Bourne recommends wheat as the first food to be rushed to Europe after the war and dried milk, whole or skimmed, as the second. As dried whole milk does not keep well, it would be better to supply dried skimmed milk and turn the fat into dehydrated butter, which keeps well. As supplies of these foods will probably be insufficient, there should be ready a store of extra fats, such as whale oil, and of protein in the form of dried meat and fish. Soya bean flour could also be stored for adding to wheat flour to augment the protein value of the bread. Synthetic vitamin C or citrus fruit concentrate also should be supplied. Second, we must plan for the continued feeding of Europe, which means planning not only of European but of world agriculture. This was discussed by the agriculturist Sir John Orr at the British Association Conference of 1941.

Reform in Teaching Anatomy

It is the experience of most medical practitioners that at their medical schools they were taught many details of anatomy which they have long forgotten. Five teachers of anatomy have published in the *British Medical Journal* a joint letter on the subject. They say that the usual curriculum of anatomy is partly determined by ideas no longer valid. Much is concerned with topographic details important only to the surgical specialist. A curriculum should be planned to provide the best possible education for the general practitioner. Such a training should provide a sound educational approach to any branch of anatomy and a foundation on which the minutiae of applied anatomy for clinical specialization can be built up at a later stage in special courses of instruction. It is far more important that a student should be well acquainted with general anatomic principles than that he should memorize facts of which a large proportion are likely to be of no practical value. Anatomic teaching must cover the whole realm of macroscopic and microscopic structure, and for the proper comprehension of structural organization histology should be taught in direct relation to the study of

gross structure and of embryology and histogenesis. Embryologic study should direct attention to morphogenic mechanisms rather than to the descriptive details of developmental stages. Great importance should be attached to courses of instruction, combined with practical study on general principles of structural organization, with special reference to processes of tissue differentiation, growth and repair, structural adaptation in response to functional requirements, and the influence of mechanical, hormonal and other factors in the induction of structural modifications. It has been shown in some schools that courses can be so arranged that all students in the same year study the same part of the body at the same time. Lectures on the anatomy of the living body, radiologic anatomy, histology and embryology can then be planned so as to deal with the part which is being dissected, allowing a much clearer correlation than in the usual curriculum. Lastly, students should be given more instruction on the postnatal growth of the body and its relation to nutritional, hormonal and other factors. A course of lectures on human genetics would be an appropriate sequel to embryology.

Wheat for the Starving Greeks

In the House of Commons, Mr. Dalton, minister of economic warfare, stated that the government had always refused to allow foodstuffs to be shipped through the blockade and thus relieve the enemy of the responsibility for feeding the peoples whom he had enslaved. But the governments of Britain and the United States had viewed with increasing dismay the appalling conditions in Greece. Despite the ability to do so, the German government had done practically nothing to meet the situation created by the pillage and extortion of its armies in the spring of 1941. Britain and the United States were prepared to authorize the shipment of 8,000 tons of wheat to Greece to be applied under the auspices of the International Red Cross in relief of the present emergency. This is in addition to the permitted shipments from Turkey of foodstuffs. The governments of Britain and the United States continue to maintain that it is incumbent on the enemy to feed the occupied countries.

The Bread Controversy

There was no shortage of bread, but eggs, fish and winter supplies of milk were short. Referring to wholemeal bread, increasing the extraction of flour to 85 per cent saved shipping and had nutritive advantages but reduced the supply of animal feeding stuffs and thus of milk, meat and eggs. In the debate Sir Ernest Graham-Little (dermatologist) stressed the value of wholemeal bread, of which he has been the leading propagandist since the subject has become topical. Sir William Bragg (ex-president of the Royal Society) had said that we should go back to it. It contained twice as much iron as white bread, ten times as much vitamin A and three times as much vitamin B. Graham-Little attacked the expensive project of the government to vitaminize white bread. He did not think that the people would resent compulsion to eat whole wheat, which was more nutritious and would save shipping. There was anxiety in the medical profession at the incidence of deficiency diseases. The wholemeal loaf was discredited because its production to specification was not enforced. The production of white bread should be prohibited.

Medical Relations with Russia

The struggle of Russia against the invaders has aroused admiration in this country and movements to help in every possible way. The Red Cross fund raised by Mrs. Churchill now exceeds $7,500,000. A committee presided over by Sir Alfred Webb-Johnson, president of the Royal College of Surgeons, for providing surgical instruments has met with a good response. Instruments valued at $15,000 have been sent by donors who do not require or can spare them. The instruments were in such good condition that less than 10 per cent required repair. For the purchase of medical supplies a subcommittee is advising Mme. Maiskiy, wife of the ambassador. During the last three months x-ray sets, autoclaves and other equipment have been sent in seventy large cases, some weighing a quarter of a ton. For the committee a book reviewing British war medicine is being compiled by Sir Philip Manson-Bahr and Mr. G. F. Home and is being translated into Russian by physicians who have volunteered for the work.

Arthroplasty of the Hip Joint

At the annual meeting of the British Orthopedic Association Prof. P. D. Wilson of New York reviewed the history of arthroplasty of the hip joint and dealt with the two methods now employed: fascial interposition with a history of twenty years and vitallium cups with a history of three or four years. He reported 39 cases, in which 45 arthroplasties had been performed, of which he had followed up 41. Of these fascial implantation was performed in 12 and the cup method in 28. In both forms of operation the best results were obtained when there was solid bony ankylosis. Periarticular scarring and adhesions were less than when there was fibrous ankylosis. Statistics tended to show a slightly better result from fascial interposition, but this was counterbalanced somewhat by the simpler technic and easier recovery when vitallium cups were used. Poor results with these occurred largely in the group of arthritic patients. The best results were obtained in conditions the result of trauma or septic necrosis. By means of the vitallium cup a wider range of use was established in old unreduced congenital dislocations.

Society for the Study of Child Health

A number of health officers and others have sent a letter to the *Times* stating that it has become evident that present knowledge of the factors affecting child health and our present means for maintaining it are inadequate. They think the time is ripe for the formation of a planning group in this branch of applied medicine. The object would be to study child health and explore the possibilities of improving the general health of children, with particular regard to social and environmental factors, nutrition and the better organization and coordination of agencies for child care. Such a group would be organized on regional lines so as to facilitate the meeting of members for discussion and would have a central body to correlate the findings and suggestions of the subgroups. Membership would not be confined to the personnel of the health services but would be open to all actively concerned with or interested in the objects of the group, including private physicians, dentists, teachers, nurses and students. No society of this kind has ever existed before, though it might be claimed that the subject comes within the scope of the Section for the Study of Disease in Children of the Royal Society of Medicine. But there the standpoint is that of the pediatrician, while here it is that of the health officer and the field is narrowed to prevention.

Psychologic Testing for the Army

A new development in the army is the General Service Corps, in which recruits undergo their basic training and the corps for which they are best suited is determined. The main factors are physical health, general intelligence, special aptitudes and standard of attainment, which are all tested. The most difficult factor to assess is personality, but it is hoped to devise a test for this. A directorate of personnel selection has been set up, and it is assisted by an advisory committee of psychologists composed of Prof. J. Bever, Dr. C. S. Myers, Prof. F. G. Bartlett and Prof. C. L. Burt. Care was taken to try out the tests against practical results before they were introduced. Thus

recruits for an armored formation were tested and a list was made of the men found unsuitable for service with tanks. After three months the list was compared with practical experience and found to agree within 5 per cent of error.

There are three filters: First, a general intelligence test is given on recruiting; second, during training misfits are combed out and transferred; third, the men most suitable for training as officers are sifted out. The last is based to some extent on German experience and is directed to ensuring that a leader is more intelligent and has quicker reactions and more personality than his men. Education and book knowledge play only a small part in intelligence tests, which are directed to determining the mother wit of the recruit. For example he is given a book containing a series of diagrams from which a section has been removed and he is asked to complete them from a number of alternatives.

BUENOS AIRES

(From Our Regular Correspondent)

March 15, 1942.

The Chair of History of Medicine

The Chair of History of Medicine of the Faculty of Medical Sciences of the University of Buenos Aires was established in 1937 with Dr. Juan Ramón Beltrán as professor. Dr. Beltrán wrote a book on the first medical society of Argentina and published it before the chair was established. The society was formed during the last few years of the colonial period. It was made up of physicians who organized the work to be carried on for the general care of the sick in hospitals and in towns with a large number of soldiers and who were regarded as the highest authorities of the country in administration of health and hygiene. The most important aims of Dr. Beltrán and his group are (1) to have complete records of the development of medical history in Argentina with monographic and bibliographic data of all those who were concerned with it, (2) to organize an index with biographic and bibliographic data of Argentinean pioneers and of workers on medicine during the last few years and (3) to organize a museum for the history of medicine. Some of the work of the chair has been published during the last few years in four volumes, which were issued with the name of "Publicaciones de la Cátedra de Historia de la Medicina." The volumes contain historical studies and research by well known Latin American historians. Volume 2 contains articles by Beltrán entitled "Introducción al estudio de la historia de la Medicina," "Síntesis histórica de la Academia Nacional de Medicina de Buenos Aires," "Estudios especiales sobre el Colegio de San Fernando de Lima" and "Epistolario of Miguel Gorman," who was the most popular physician of the first medical society of La Plata. Some important articles in the other three volumes are "La medicina entre los Mayas" by Máximo Soto Hall, "Historia de la anestesia" by Márquez Miranda, "La fundación de la Casa de Expósitos" by Alonso, "La organización colonial del hospital de mujeres en Buenos Aires" by Aníbal Ruíz Moreno and articles on the work carried on by Ramón y Cajal by Ara, on the work carried on by Semmelweis by Beruti, on epidemics in Buenos Aires by Besio Moreno and on the work carried on by Nicolás Monardes by Torres Revello. The collection of articles in these volumes is of great importance.

New Journal on History of Medicine

The first issue of the *Revista Argentina de Historia de la Medicina,* which is the official organ of the society Ateneo de la Historia de la Medicina of Buenos Aires, was dated January 1942. It contains the following articles: "Primeros Estudios de Medicina en Cuba" by Horacio Abascal, "Rosas el Dictador en Argentina y Vacuna" by Beltrán and "Historia de la Medicina en Argentina" by Sigerist. It contains also an article on "Jade" of China by Juan Marín and several commentaries and notes on the history of medicine. This journal will appear three times a year.

Personals

The society Ateneo de Historia de la Medicina of Buenos Aires recently appointed as honorary members Tricot Roger, founder and honorary president of the International Society of the History of Medicine, Laignel-Lavastine of the Faculty of Medicine of Paris, Paul Diepgen of the University of Berlin, Esmond R. Long, president of the American Association of the History of Medicine, Prof. Henry E. Sigerist of the Johns Hopkins University School of Medicine, Carlos Enrique Paz Soldán of the University of San Marcos, Lima, Juan B. Lastres of the Faculty of Medicine of Lima, Gregorio Marañon, noted for Spanish researches on endocrinology, Carlos Martínez Durán of Guatemala, Alfonso Pruneda of Mexico, Horacio Abascal of Havana, Alfredo Monteiro, Mariano de Andrade, Raúl Jobín Bittencourt and A. Barboza Vianna of Rio de Janeiro, Raúl Briquet, Edmundo Vasconcelos and Alvaro Guimaraes Filho of São Paulo, Brazil, Raúl Laitao da Cunha, dean of the National University of Rio de Janeiro, and José Arce, ex-dean of the Faculty of Medical Sciences of Buenos Aires.

BUCHAREST

(From Our Regular Correspondent)

Dec. 27, 1941.

Precautionary Measures Against Foot and Mouth Disease

Although foot and mouth disease has not been reported in this country for a long time, the Ministry of Health addressed a circular to all sanitary authorities pointing out that the disease appears to have been introduced in the past through private slaughter houses in which the disease was not recognized. Not only the slaughter house was involved but all places where the meat from it was deposited, prepared or exposed for sale. The parts of the animals requiring special examination are the head, tongue and feet. Cattle, sheep, goats and pigs may be affected, and the disease is transmissible to human beings, to whom, however, danger to life therefrom occurs only in exceptional cases. The disease in animals is compulsorily notifiable to the police—in villages to the district veterinary surgeon whose duty it is to pass the notification to the competent authorities. The disease may be transmitted to man through milk, butter and cheese or by inoculation through wounds in the hands and arms and may cause in man fever and digestive troubles, vesicles on the lips, fingers, arms, inside the mouth, pharynx and conjunctivas, salivation, nausea, offensive breath, pains in the limbs and swelling of the cervical glands. The technical name of the disease is epizootic eczema and the virus appears in concentrated form in the vesicles and saliva of those affected.

A special circular was sent to medical officers of health and to parish physicians with instructions as to isolation, differential diagnosis and treatment. The circular describes a case in which the infection of foot and mouth disease was localized to the eye. In this case contact was by shaking hands. Conjunctivitis developed and severe ciliary infection followed. The cornea was free. The inner third of the superior palpebral margin suppurated and was covered with a semiadherent membrane. Both eyelids were considerably edematous, and there were large, firm, slightly sensitive glands below the angle of the chin and in the neck. Treatment consisted of local applications of mercury bichloride 1:4,000 and 2 per cent preparation of colloidal silver and silver oxide stabilized by derived egg albumin (collargol) administered almost every hour. Within eight days the eyes and mouth healed as well as the cutaneous nodules. Recovery was complete.

Deaths

Shirley Wilmotte Wynne, New York; Columbia University College of Physicians and Surgeons, New York, 1904; medical inspector, city department of health, from 1907 to 1911, assistant registrar from 1911 to 1915, chief of the division of statistical research from 1915 to 1920, assistant to the commissioner of health from 1920 to 1924, director of hospitals from 1924 to 1926, deputy commissioner from 1926 to 1928 and commissioner of health from 1928 to 1933; formerly professor of preventive medicine, New York Polyclinic Medical School and Hospital; consulting physician, Willard Parker Hospital and the Midtown Hospital; at one time trustee of the New York State Hospital for Incipient Tuberculosis, Otisville, N. Y., president of the Children's Welfare Federation; aged 59; died, April 19, in St. Luke's Hospital of acute appendicitis with peritonitis.

Frank Breckenridge Earle, La Grange, Ill.; College of Physicians and Surgeons of Chicago, 1885; member of the Illinois State Medical Society; joined the staff of his alma mater in 1885 with the title curator of museums, in 1888 became lecturer on practice of medicine, in 1889 assistant to the chair of practice, in 1894 lecturer on obstetrics, from 1895 to 1902 professor of obstetrics, from 1901 to 1913 secretary of the college, and from 1903 until September 1914 professor of pediatrics, when he was made professor emeritus; served during World War I; aged 81; died, March 6, in Eustis, Fla., of arteriosclerosis and bilateral pyonephrosis.

Edwin Abe Baumgartner ✠ Newark, N. Y.; Washington University School of Medicine, St. Louis, 1919; member of the American Association of Pathologists and Bacteriologists; fellow of the American College of Physicians; instructor of anatomy at the University of Wisconsin, Madison, 1911-1912, University of Minnesota, Minneapolis, from 1912 to 1914 and instructor and later associate in anatomy at his alma mater from 1914 to 1919; associate pathologist, Clifton Springs (N. Y.) Sanitarium from 1921 to 1932; since 1932 director, Newark State School and county laboratory; aged 54; died, March 15, in the Clifton Springs Sanitarium of a streptococcic infection.

Ralph Merle Carter ✠ Green Bay, Wis.; Rush Medical College, Chicago, 1908; past president of the State Medical Association of Wisconsin; member of the Western Surgical Association, Clinical Orthopaedic Society, American Academy of Orthopaedic Surgeons and the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; served during World War I; attending orthopedist, St. Vincent's, Bellin Memorial and St. Mary's hospitals; aged 58; died, March 24, of coronary thrombosis.

Henry George Lampe, Chicago; College of Physicians and Surgeons, School of Medicine of the University of Illinois, 1901; was associated with the Veterans Administration, Hines, Ill., from July 1923 to March 1928; formerly local surgeon, health officer and assistant surgeon, Illinois Central System; served during World I; aged 62; on the staff of the Illinois Central Hospital, where he died, March 5, of coronary thrombosis and hypertensive heart disease.

Hallward Martin Blegen ✠ Warren, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; past president of the Red River Valley Medical Society; surgeon for the Great Northern and Soo railways; coroner of Marshall County; president of the Warren board of education for twenty years; on the staff of the Warren Hospital; aged 56; died, March 26, in the University Hospital, Minneapolis, of Addison's disease.

Walter Erastus Spicer, Jackson, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1884; member of the Michigan State Medical Society; formerly on the staff of the Manhattan Eye, Ear and Throat Hospital, New York, and the Children's Hospital, Randall's Island, N. Y.; aged 86; died, March 8, in the W. A. Foote Memorial Hospital of a fractured hip received in a fall on an icy sidewalk.

Maurice Duane Bird ✠ Marinette, Wis.; Rush Medical College, Chicago, 1896; formerly secretary of the Marinette-Florence Counties Medical Society; fellow of the American College of Surgeons; consulting surgeon, St. Joseph's Hospital, Menominee, Mich.; on the staff of the Marinette General Hospital; served as surgeon for the Chicago, Milwaukee, St. Paul and Pacific Railroad; aged 69; died, March 13, of heart disease.

George Artemas Brown, Barre, Mass.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1883; member of the Massachusetts Medical Society and the New England Society of Psychiatry; physician and owner of the Elm Hill School for Feebleminded for many years; for many years member of the school committee; aged 83; died, March 14, of chronic myocarditis.

Ralph Ellis Murrell ✠ Lieutenant Colonel, M. C., U. S. Army, Washington, D. C.; St. Louis College of Physicians and Surgeons, 1917; entered the medical corps of the U. S. Army as a first lieutenant Oct. 31, 1919; served during World War I; was commissioned a captain May 5, 1921, a major May 7, 1930 and a lieutenant colonel May 7, 1938; aged 50; died, February 2, of cerebral hemorrhage.

Harry Fletcher White ✠ Medical Director, U. S. Public Health Service, New York; University College of Medicine, Richmond, Va., 1908; was commissioned an assistant surgeon in the U. S. Public Health Service in 1913, passed assistant surgeon in 1917, surgeon in 1921, senior surgeon in 1933 and medical director since 1939; stationed at Ellis Island, N. Y., since 1937; aged 57; died, January 23.

William Creighton A. Garvin ✠ Binghamton, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1903; member of the American Psychiatric Association and the American Psychopathological Association; superintendent of the Binghamton State Hospital; formerly superintendent of the Kings Park (N. Y.) State Hospital; aged 68; died, April 3, of cerebral thrombosis.

Heber J. Sears, Salt Lake City; Harvey Medical College, Chicago, 1905; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; member of the Utah State Medical Association; formerly professor of hygiene and sanitation at the University of Utah School of Medicine; aged 80; died, February 24, in Beverly Hills, Calif., of acute dilatation of the heart.

Robert Robinson Armstrong, Passaic, N. J.; University of the City of New York Medical Department, New York, 1895; member of the Medical Society of New Jersey; served during World War I; surrogate of Passaic County; formerly member of the city board of health and board of education; at one time county physician; aged 69; died, April 6, of carcinoma of the mouth.

Max Robert Dinkelspiel ✠ New York; Jefferson Medical College of Philadelphia, 1902; associate editor of the Merck Manual of Therapeutics and Materia Medica; at one time on the editorial staff of the *Philadelphia Medical Journal and Therapeutic Monthly;* translator of several volumes of Nothnagel's series of medicine; aged 66; died, March 13, of coronary heart disease.

Charles W. Moseley, Greensboro, N. C.; Baltimore Medical College, 1893; member of the Medical Society of the State of North Carolina; aged 76; on the staffs of the Wesley Long, St. Leo's, L. Richardson Memorial and Sternberger hospitals; charter member of the staff of the Piedmont Memorial Hospital where he died, March 7, of pneumonia.

Henry Woodul Smith, Roodhouse, Ill.; College of Physicians and Surgeons of Chicago, 1894; member of the Illinois State Medical Society; formerly member of the state legislature; at one time mayor and member of the board of education; aged 75; died, March 12, in Our Saviour's Hospital, Jacksonville, of carcinoma of the liver.

John Henry Rosenberg, Prineville, Ore.; University of Oregon Medical School, Portland, 1897; member of the Oregon State Medical Society; mayor of Prineville; served during World War I; formerly member of the state board of health; aged 67; died, February 24, in St. Charles Hospital, Bend, of coronary embolus.

Henry S. Stearns, New York; University of the City of New York Medical Department, New York, 1884; member of the Medical Society of the State of New York; in 1905 president of the Medical Society of the County of New York; aged 80; died, April 2, of senility.

Joseph Warrick Clifford ✠ Worthington, Ind.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1895; an Affiliate Fellow of the American Medical Association; at one time county coroner; aged 79; died, March 26, in the Methodist Hospital, Indianapolis.

George Boyd Dyche, Wheaton, Ill.; Northwestern University Medical School, Chicago, 1897; formerly associate professor of medicine at his alma mater; at one time on the staff of the Community Hospital, Geneva; aged 69; died, March 16, of carcinoma of the colon.

Howard Russell Hansell, Sharon, Conn.; University of Pennsylvania School of Medicine, Philadelphia, 1927; member of the Connecticut State Medical Society; on the staff of the Sharon Hospital; aged 40; died, March 6, of acute myocarditis and arteriosclerosis.

Hugh Ratcliffe Inksater, Calgary, Alta., Canada; University of Toronto Faculty of Medicine, 1930; was called to active duty as a captain in the Royal Canadian Army Medical Corps, July 8, 1941; aged 35; was killed in an accident, January 18, while overseas.

James Arnold Bledsoe, Port Arthur, Texas; University of Louisville (Ky.) Medical Department, 1915; served with the British government during World War I and was awarded the Distinguished Service Cross; aged 53; died, March 7, of heart disease.

Harry Randolph Spickermon, North Henderson, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; aged 68; died in March at St. Mary's Hospital, Galesburg, of pneumonia and emphysema.

Emanuel Taft ✠ Chicago; University of Illinois College of Medicine, Chicago, 1932; formerly on the staff of Mount Sinai Hospital; on the visiting staff of the Lutheran Deaconess Hospital; aged 33; died, March 1, in the Michael Reese Hospital.

Waldemar Alfred Christensen, San Francisco; Kentucky School of Medicine, Louisville, 1896; formerly first lieutenant in the medical reserve corps of the U. S. Army; aged 71; died, February 6, of coronary sclerosis and hypertrophy of the prostate.

Anthony John Boucek, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1890; member of the Medical Society of the State of Pennsylvania; on the staff of St. John's General Hospital; aged 73; died, March 8, of coronary heart disease.

Edward Miers ✠ Des Plaines, Ill.; Kentucky School of Medicine, Louisville, 1905; National Medical University, Chicago, 1907; on the staff of St. Mary of Nazareth Hospital, Chicago; aged 65; died, March 14, of heart disease.

Ernst Lohnberg ✠ San Francisco; Rheinische Friedrich-Wilhelms-Universität Medizinische Fakultät, Bonn, Prussia, Germany, 1911; aged 57; died, February 14, of cerebral hemorrhage and hypertensive cardiovascular disease.

Paul Menken Eicks, Grenloch, N. J.; University and Bellevue Hospital Medical College, New York, 1927; resident physician on the staff of the Camden County Hospital; aged 40; died, March 6, of diabetes mellitus.

Howard Draper Speakman, Pau, France; University of Pennsylvania Department of Medicine, Philadelphia, 1881; formerly on the staff of the Manhattan Eye and Ear Hospital, New York; aged 83; died, March 9.

Manfred Mayer Zachart, New York; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, Germany, 1922; member of the Medical Society of the State of New York; aged 46; died, February 17.

John Knox McLeod, Sydney, N. S., Canada; Bellevue Hospital Medical College, New York, 1883; served during World War I; for many years medical health officer of Sydney; aged 78; died, February 19.

Emery Wilbur Brooks, Muncie, Ind.; Barnes Medical College, St. Louis, 1901; served during World War I; aged 66; died, March 30, in the Veterans Administration Facility, Marion, of cerebral hemorrhage.

S. Clarence Swartz, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1909; on the auxiliary staff of the Sacred Heart Hospital, Allentown, Pa.; aged 57; died, March 9, of heart disease.

Axel Thorsten Larson, Chicago; Northwestern University Medical School, Chicago, 1925; member of the Illinois State Medical Society; aged 58; died, March 14, in Tucson, Ariz., of rheumatic heart disease.

George Leonard Haefele, Cleveland; Western Reserve University Medical Department, Cleveland, 1885; served during World War I; aged 78; died, February 13, of cerebral hemorrhage and arteriosclerosis.

George Herman Tuttle, South Acton, Mass.; Harvard Medical School, Boston, 1891; member of the Massachusetts Medical Society; aged 76; died, April 2, in the Massachusetts General Hospital, Boston.

Ernest A. Dieckmann, Keyesport, Ill.; Missouri Medical College, St. Louis, 1897; aged 73; died, March 10, in the Alton (Ill.) State Hospital of cerebral arteriosclerosis and fracture of the neck of the femur.

John Morris Markley, Schwenkville, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; member of the Medical Society of the State of Pennsylvania; aged 71; died, March 15.

James Leon Harrington, Amherst, Mass.; Jefferson Medical College of Philadelphia, 1903; member of the New England Dermatological Society; aged 63; was found dead, March 3, in a hotel at Boston.

Robert Weber, Yorktown, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; aged 64; hanged himself in February while in Los Angeles.

Jefferson Davis Bradfield, Washington, D. C.; Georgetown University School of Medicine, Washington, 1891; formerly diagnostician in the District health department; aged 74; died, March 7.

Harry Miller Anderson, Allentown, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; served during World War I; aged 65; died, March 3, of myocarditis.

William Janowski Bernis, Buffalo; Harvard Medical School, Boston, 1907; member of the Association for Research in Nervous and Mental Diseases; aged 66; died, March 3, of myocarditis.

John William Thomason ✠ Huntsville, Texas; University of Virginia Department of Medicine, Charlottesville, 1885; fellow of the American College of Surgeons; aged 77; died, March 4.

Mark Allen Gier, Elgin, Ill.; Jenner Medical College, Chicago, 1909; served during World War I; formerly on the staff of St. Elizabeth Hospital, Chicago; aged 65; died, March 2.

Julius Bernard Nelson, Long Beach, Calif.; St. Louis University School of Medicine, 1904; veteran of the Spanish-American War and World War I; aged 71; died, February 1.

Evan Moody Gavin, Stafford Springs, Miss.; University of Alabama School of Medicine, 1910; state senator; served during World War I; aged 55; died, March 18, in Jackson.

Thomas Hiller Dreher, St. Matthews, S. C.; College of Physicians and Surgeons, Baltimore, 1891; aged 80; died, March 1, in the Tri-County Hospital, Orangeburg, of uremia.

Francis Xavier McNamara, Cleveland; Cleveland Medical College, 1897; University of Wooster Medical Department, Cleveland, 1904; aged 67; died, February 24, of angina pectoris.

Edward Whittier, Albion, N. Y.; University of Buffalo School of Medicine, 1889; aged 76; died, March 9, in the Arnold Gregory Memorial Hospital of coronary occlusion.

Frank J. Robinson ✠ Fairfield, Maine; Long Island College Hospital, Brooklyn, 1875; an Affiliate Fellow of the American Medical Association; aged 92; died, February 14.

William Chalian, Springfield, Mass.; Johns Hopkins University School of Medicine, Baltimore, 1935; aged 32; was found dead in bed, March 10, in a hotel in Allentown, Pa.

John J. Kiefer, Westpoint, Neb.; St. Louis College of Physicians and Surgeons, 1897; aged 72; died, February 16, in the St. Joseph Home and Hospital of heart disease.

Curt H. Weis, Nampa, Idaho; Rheinische Friedrich-Wilhelms-Universität Medizinische Fakultät, Bonn, Prussia, Germany, 1938; aged 33; died recently in San Francisco.

William Michael Maloney ✠ Los Angeles; Cornell University Medical College, New York, 1924; on the staff of the Queen of Angels Hospital; aged 61; died, February 28.

Ernst Steinitz ✠ New York; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1904; aged 60; was found dead, February 1.

Charles Fremont Turney, Columbus, Ohio; Starling Medical College, Columbus, 1880; formerly member of the city council and school board; aged 85; died, February 20.

John Henry Meyhaus, Sioux City, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; aged 69; died, March 6.

Harry Cockerille Blair, Elkins, W. Va.; University of Louisville (Ky.) Medical Department, 1911; served during World War I; aged 56; died in March.

William Joseph Riordan, Wallingford, Conn.; Baltimore Medical College, 1909; member of the Connecticut State Medical Society; aged 56; died in March.

Joseph Burch Davis, Huntington Park, Calif.; Chicago Homeopathic Medical College, 1894; aged 72; died, February 10, of coronary heart disease.

Henry Roland Niles, Los Angeles; Detroit College of Medicine, 1894; aged 72; died in February of carcinoma of the ureter and cirrhosis of the liver.

Frank Oscar Burk ✠ Davenport, Iowa; State University of Iowa College of Medicine, Iowa City, 1907; aged 67; died, March 10, in the Mercy Hospital.

Thomas P. Bodkin, San Francisco; Cooper Medical College, San Francisco, 1893; aged 74; died, February 26, of nephrosis and coronary sclerosis.

Oscar Clarence Kessler, Elkland, Mo.; Ensworth Medical College, St. Joseph, 1888; aged 82; died in February at a hospital in Springfield of nephritis.

Rex Lewis Ross, Santa Monica, Calif.; Jefferson Medical College of Philadelphia, 1916; served during World War I, aged 56; died, February 9.

Samuel D. Houston ✠ Polo, Ill.; Chicago Physio-Medical Institute, 1886; aged 84; died, March 10, in the Hinsdale (Ill.) Sanitarium and Hospital.

William Henry Peer, Flushing, N. Y.; University of the City of New York Medical Department, New York, 1888; aged 74; died, February 22.

James Jorgen Clausen, Kansas City, Mo.; College of Physicians and Surgeons of Chicago, 1891; aged 76; died, March 4, of carcinomatosis.

Ford Nelson Jones, New Orleans; University of Michigan Homeopathic Medical School, Ann Arbor, 1908; aged 59; died, March 4, of heart disease.

Frank Charles Baecht, Grafton, Ill.; Beaumont Hospital Medical College, St. Louis, 1895; served during World War I; aged 77; died in March.

Jerome Harvy Hunter, Chicago; Meharry Medical College, Nashville, Tenn., 1921; aged 53; died, March 21, of pneumococcic meningitis.

Edward Ellsworth Campbell, Douglas, Ariz.; Chicago Homeopathic Medical College, 1890; aged 80; died, March 24, of chronic myocarditis.

Daniel Gott Hastings ✠ Rochester, N. Y.; Harvard Medical School, Boston, 1888; aged 80; died, March 21, of arteriosclerosis and nephritis.

Ezra Wainford Longnecker, Dayton, Ohio; Medical College of Ohio, Cincinnati, 1884; aged 82; died, March 5, of cerebral hemorrhage.

Alexander Anderson Sutherland, Blubber Bay, B. C., Canada; Trinity Medical College, Toronto, Ont., 1891; aged 76; died in January.

Willey Clayton Nedrow ✠ Friendsville, Md.; University of Louisville (Ky.) Medical Department, 1907; aged 58; died, March 9, of uremia.

John K. Suckow, Los Angeles; University of Southern California College of Medicine, Los Angeles, 1905; aged 69; died, February 3.

James A. Miller, Garrettsville, Ohio; Homeopathic Hospital College, Cleveland, 1886; aged 82; died, March 8, in Phoenix, Ariz.

Charles Ignatius Anders ✠ Old Fort, Ohio; University of Wooster Medical Department, Cleveland, 1894; aged 72; died, March 8.

Rasselas Wagner, Los Angeles; Missouri Medical College, St. Louis, 1879; aged 86; died, February 18, of acute parotitis (nonepidemic).

Arthur Lee Chapman, Courtland, Miss. (licensed in Mississippi in 1890); aged 64; died, February 14, of carcinoma of the bladder.

Samuel Michael Clurman, New York; University and Bellevue Hospital Medical College, New York, 1900; aged 74; died in March.

George Monroe Cobb, Ector, Texas; University of Tennessee Medical Department, Nashville, Tenn., 1895; aged 73; died in March.

Daniel H. Crawford, Charleston, W. Va.; Hahnemann Medical College and Hospital, Chicago, 1890; aged 76; died, February 28.

William Marion Lauffer, North Irwin, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1891; aged 78; died, February 24.

John P. Hornig, Cedarburg, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1901; aged 76; died, February 28.

Walter Carlton Bidelspach ✠ Waco, Texas; University of Texas School of Medicine, Galveston, 1918; aged 49; died, February 15.

Irving Edwin Brainard, Wallingford, Conn.; Yale University School of Medicine, New Haven, 1902; aged 64; died, February 13.

Ralph Motheral, Hanford, Calif.; Vanderbilt University School of Medicine, Nashville, Tenn., 1903; aged 64; died, February 13.

Henry Jefferson O'Brien, Los Angeles; Medical Department of Hamline University, Minneapolis, 1895; aged 72; died, January 28.

Joseph Henry Mowers, Shippensburg, Pa.; University of Maryland School of Medicine, Baltimore, 1878; aged 87; died, February 7.

Edgar E. Hodges, Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1906; aged 62; died, February 7.

Frank Eubank Booker, Halifax, Va.; Medical College of Virginia, Richmond, 1898; aged 67; died in March of cerebral hemorrhage.

Frederick Ackerman, New York; University and Bellevue Hospital Medical College, New York, 1904; aged 62; died, March 18.

Joseph Ray Anderson, Louisville, Ky.; University of Louisville (Ky.) Medical Department, 1893; aged 71; died, March 26.

Ignatius Michael Jarzynski, Cleveland; Western Reserve University School of Medicine, Cleveland, 1914; aged 54; died, March 11.

Frank Barnard Sutliff, Sacramento, Calif.; Albany (N. Y.) Medical College, 1878; aged 89; died, February 11, of coronary occlusion.

John Lorin Aird ✠ Manhattan Beach, Calif.; University of Colorado School of Medicine, Denver, 1926; aged 42; died, March 9.

Edward Atkinson ✠ Niantic, Conn.; University of Vermont College of Medicine, Burlington, 1893; aged 80; died, March 5.

Peter Beemer Davenport ✠ Colesville, N. J.; New York University Medical College, New York, 1897; aged 72; died, March 8.

Chester Eugene Blackman, Bridgeport, Conn.; Long Island College Hospital, Brooklyn, 1897; aged 69; died, February 16.

John Robert Irwin, Cobourg, Ont., Canada; University of Toronto Faculty of Medicine, 1902; aged 63; died, January 12.

Joseph Harrison Riley, Lexington, Ky.; Louisville Medical College, 1898; aged 68; died, February 22, of cerebral hemorrhage.

Thomas E. Shepard, Tulsa, Okla. (licensed in Oklahoma under the Act of 1908); aged 73; died, March 9, of pneumonia.

Howard Kenneth Shrom ✠ Detroit; Jefferson Medical College of Philadelphia, 1924; aged 41; died in March.

Robert Bonney ✠ Boston; Harvard Medical School, Boston, 1898; aged 83; died, March 22, at the City Hospital.

Bureau of Investigation

SOME MISCELLANEOUS MEDICAL FRAUDS

A Variety of Schemes Debarred from the Mails

Fraud orders issued by the Post Office Department have frequently been the subject of extensive articles by the Bureau of Investigation in these pages of THE JOURNAL. Following are brief abstracts of some fraud orders not dealt with previously:

Crampton's Products, Inc.—A James W. Crampton of Buffalo used this trade style in selling a mail-order "pile cure" known as "Crampton's Pil-Lene Suppositories." This seems to be the person who, as James E. Crampton, had originally conducted a similar business in connection with F. J. Lipinski, the two men trading as Grant Laboratories, Buffalo, and putting out something they called "J. E. C.'s Rectal Remedy." As the result of a complaint that was filed against them by the Federal Trade Commission for representing their nostrum as a competent treatment for piles or hemorrhoids, these persons signed a stipulation with the Commission around July 1, 1937 in which they promised to discontinue the misrepresentations for their product and also to cease using the word "Laboratories" until they should actually be operating one. Whether Lipinski remained in the business is not clear, but the records do show that the name "J. E. C.'s Rectal Remedy" was changed to "Crampton's Pil-Lene Suppositories" and marketed under the trade style Crampton's Products, Inc., of Buffalo. The next government agency to take action was the Post Office Department, which objected to the representations that Pil-Lene would quickly cure and give "total relief" from hemorrhoids regardless of the severity or duration of the disorder on the ground that such claims were fraudulent. Crampton made a general denial of the charges but put in no appearance at the hearing held on Dec. 2, 1940, when he was to have been present to show cause why a fraud order should not be brought against him. At that hearing the government's witnesses were the Post Office inspector who had investigated the case, as well as a qualified medical expert and a government chemist. The latter testified that the treatment consisted of suppositories each averaging 1.96 Gm. in weight and containing 0.48 grain of the alkaloids of celandine and mullein in a tallow base. One suppository was to be taken at night and another the next morning until at least two weeks after all signs of hemorrhoids had disappeared. The medical witness testified that although these suppositories might produce a mild analgesic effect due to the depressant action of the ingredients on the nerve endings and mucous membranes with which they came in contact, the correct treatment of hemorrhoids was one based on the causative factors and a proctoscopic examination of the patient. He further stated that mild cases might be treated palliatively by the use of any lubricating substance to produce temporary relief but that to obtain complete relief or cure and prevent recurrence, surgical procedures or the injection of sclerosing substances would be necessary. Accordingly the Post Office declared the Crampton scheme to be a swindle and debarred it from the mails by means of a fraud order issued Dec. 21, 1940 against Crampton's Products, Inc., and their officers and agents.

Regina's Herbatorium.—From New York the concern that did business under this name promoted "Lapidar" through the mails by representations which the Post Office considered false and fraudulent. Among these were that the nostrum would dissolve and remove gall, kidney and bladder stones, relieve and overcome epilepsy, prevent apoplexy, restore full and normal use of limbs to all persons who have suffered apoplectic attacks and prevent or overcome dizziness, cold feet, stiff limbs, faulty circulation, arteriosclerosis, carbuncles, skin diseases, blindness, baldness and swelling of the glands or limbs and do some other things! It was shown also that the promoters sent inquirers circular matter describing not only Lapidar but several hundred other products which the same concern sold. Accordingly the Post Office ordered Regina's Herbatorium to show cause on Aug. 11, 1941 why it should not be the subject of a fraud order. The concern replied that it had forwarded the memorandum of charges and letter of citation to the Lapidar Company at Chino, Calif., which supplied it with Lapidar and the accompanying literature, in the hope that the Lapidar Company would revise the objectionable advertising claims. The Post Office replied that as Regina's Herbatorium solicited remittances under its own name any fraud order issued would cover that name even if the Regina concern did not prepare its literature. Then came a letter to the Post Office from one C. P. Von Herzen of Los Angeles who stated that he was the attorney for Robert Mauer, owner of the Lapidar Company. He attempted to justify the literature and urged that no fraud order be issued with respect to the Lapidar product. No one representing Regina's Herbatorium appeared at the hearing of this case There it developed that statements on the labels, supplemented by chemical analysis and microscopical examination made by the Food and Drug Administration, showed that Lapidar consisted of tablets weighing 1.4 grains each and containing licorice, oil of anise, tansy herb, cascara bark, meum mutelum, althmanta, parietaria, dictamnus, seselium, laserpitium, pimpinella, ononis, cichorii, potentilla aurea, galeobdolon, tanacteum, scolopendrium, herniaria, and other roots and blossoms. The chemist also testified that in seventeen of these tablets he found a trace of alkaloid. The directions were to take 5 to 10 tablets four times a day on an empty stomach. An expert medical witness for the government testified that this mixture had no therapeutic value beyond that of a laxative and would not overcome or cure the conditions for which it was sold. Hence it was held to constitute a swindle on the public and on Nov. 25, 1941 a fraud order was issued against the name Regina's Herbatorium, debarring it from further use of the mails.

The Champion Institute.—Under this title a Mrs. M. H. Champion of Los Angeles was engaged in the mail order sale of a course of what she called "simple scientific exercises" for various eyesight defects. The Post Office implied that she might be the Mrs. Maud Champion listed in the Los Angeles city and telephone directories as an astrologist. The treatment that Mrs. Champion promoted was based on the preposterous theory that eye exercises cure far sightedness, myopia, "old age eyes" and astigmatism, restore normal vision and "perfect sight" to persons afflicted with the eye defects mentioned and others, without the necessity for wearing glasses. In fact, some of the advertising stated, "The Champion system is based upon the principles set forth by the Famous Dr. W. H. Bates in his book for doctors 'The Cure of Imperfect Sight by Treatment without Glasses.'" (Readers of THE JOURNAL are, of course, familiar with the Bates buncombe, which was dealt with at some length in the issue of Oct. 13, 1923, page 1301). For a mere $3—which, as Mrs. Champion pointed out, was "far less than the cost of properly fitted glasses,"—one could obtain the lessons and exercise chart, with the assurance that "you will always be able to look back to this as a red-letter day in your life, this day when you took the first step toward regaining normal vision." The scientific testimony presented by a government witness at the hearing of this case showed that exercises of the type prescribed by Mrs. Champion are not new but that on the contrary their effects, limitations and possible benefits are well defined; that some exercises have a proper place when, after careful examination and diagnosis of the patient's eyes there is found an imbalance of the extraocular muscles which may be benefited by certain selective exercises. The witness further testified, however, that the Champion lessons evidently are based on the false theory that all defects of vision are due to imbalance or impairment of the extraocular muscles. It was shown that attempts by persons having hyperopia, myopia, presbyopia, astigmatism or combinations of these disorders to discard their glasses and employ the "Champion treatment" might bring about unnecessary eyestrain, headaches, inflammation or other undesirable symptoms. As a result, the Post Office declared that the misrepresentations made for the "Champion Eye-Athletics System for Developing Perfect Eye Sight" constituted a fraud and on April 4, 1941 the Champion Institute and its officers and agents were debarred from further use of the mails.

The Great Christopher Corporation and the Alright Specialty Company, Ltd.—According to the Post Office Department one Emil H. Funk started the first-named concern in Buffalo and later added his wife and his son-in-law, Leo G. Dake, to his staff. Among the nostrums they put out were "King's Ointment," "Christo Hair Dressing" (or "Scalpolene") and "Alright Shampoo-Shaving Cream" (or "Reliable Shampoo-Shaving Cream"). Because of unwarranted claims made for these products Funk was cited by the Post Office in January 1938 to show cause why a fraud order should not be issued against his business. Funk and Dake, for their own protection, then executed and filed with the Post Office an affidavit in which they agreed to discontinue the use of the mails in the sale of their preparations. It was learned, however, that Funk and Dake continued to answer inquiries regarding their hair-growing treatment from Buffalo but directed inquirers in this country to send their orders to Stevensville, Ontario, Canada, where they were filled by a person whom they employed for that purpose and who appears to have operated as the Alright Specialty Company. Since these facts were evidence that Funk and Dake had not abided by the terms of their affidavit filed in March 1938 but had continued the sale of the products through the mails, the Post Office, on Sept. 17, 1941, ordered Funk to show cause on October 13 why a fraud order should not be issued against him and the two firm names that he used. After a postponement to October 27, Funk's attorney notified the Post Office that his client would not put up a defense but would consent to the issuance of a fraud order against him. At the hearing on October 27 the government produced an expert medical witness and also a chemist who had analyzed some of Funk's products. The latter reported the following composition—King's Ointment: zinc oxide, 18.66 per cent, sulfur, 9.6 per cent, phenol, 2.45 per cent, volatile oils, 0.82 per cent and traces of boric acid and cadmium in an ointment base; Christo Hair Dressing: essentially sulfur, 5.5 per cent, salicylic acid, 0.68 per cent, resorcin, 0.60 per cent and crude oil, in a base of perfumed petrolatum; Alright Shampoo-Shaving Cream: white perfumed cream soap. King's Ointment was represented as a cure for leg sores, eczema and "rectal irritations." Christo Hair Dressing and Alright Shampoo-Shaving Cream were claimed to produce a new crop of hair on "shiny bald heads" when used as directed. There was also mention of three additional nostrums which the government chemist apparently did not analyze, "Kimo Tablets" (to supply iron to the system), "Asthma Remedy" and something named more specifically "Indian Remedy for Asthma." In addition, Funk sold "formulas" for preparations supposed to remedy heart disease, psoriasis, stomach disorders, "lost manhood," gonorrhea and catarrh. The government's expert medical witness in this case pointed out the dangers involved in attempting to treat oneself for a good many of these conditions and also the worthlessness of "patent medicines" in such treatment. On Dec. 8, 1941 the Post Office issued a fraud order against the Great Christopher Corporation of Buffalo and its officers and agents, including E. H. Funk, President, and E. H. Funk, Manager, and the Alright Specialty Company, Ltd., and its officers and agents of Stevensville, Ontario, Canada. In this connection it is interesting to note that Funk, at least for a time, did business under still another name, The Reliable Specialty Corporation, Buffalo, and that on Aug. 13, 1938 the Federal Trade Commission, after several hearings, ordered this concern to cease and desist from misleading and exaggerated representations in connection with the sale of certain "patent medicines." The ones named in the order were Dr. King's Ointment, Scalpolene, Reliable Herb Tablets, Beat-Sall Iron Compound Tonic Tablets, Reliable Anti-Stout Tablets, Reliable Cold Tablets, Romola Antiseptic Powder, Reliable Herb Tea, Egyptian Asthma Remedy, Reliable Rheumatic Remedy and Great Christopher Corn and Callus Remedy.

Correspondence

CONTAGIOUSNESS OF ACUTE ANTERIOR POLIOMYELITIS

Contagiousness through direct personal contact in epidemic and nonepidemic periods of acute anterior poliomyelitis is regarded by many departments of public health as a settled fact. The quarantine laws, however, as to the length of isolation applicable to contacts of this disease vary in states, counties and cities. The student of epidemiology is frankly at a loss in interpreting quarantine laws except from a legal point of view, and perhaps all such laws should be remodeled in order to meet modern epidemiologic methods and knowledge. The degree of contagiousness or, better termed, the infectivity rate, as determined by secondary cases, which can be attributed to contact, varies in epidemic and nonepidemic periods of acute anterior poliomyelitis. Moreover, the epidemiologic and clinical evidence appears definite and almost conclusive that the infectivity rate due to contact is far less in acute anterior poliomyelitis than in any other communicable disease. Perhaps the fact that the inciting agent is a filtrable virus possessing no unusual degree of viability, and whose entry into the body is generally considered the nasopharynx, may be the determining factor in the limited contagiousness due to direct personal contact. The health official in times of elevated epidemic indexes is confronted with the closing of schools or delaying of the opening and the closing of swimming pools, theaters, churches and the like to children of susceptible age.

The beneficial effects of any one of these allegedly important quarantine or preventive measures, even when they are put into operation in their entirety, appear to be decidedly controversial. Therefore the conclusion of Casey (Observations of an Epidemic of Poliomyelitis, *Science* **95**:359 [April 3] 1942) in describing a recent epidemic of poliomyelitis that "human travel was a major factor in the spread of the disease from neighborhood to neighborhood" deserves attention from health officials. Furthermore, the additional conclusion that "eighty per cent of the poliomyelitis patients had probably visited or been visited by a prior poliomyelitis patient" is one of observation only and not especially corroborative.

In the 1934 outbreak of this disease in San Francisco (Geiger, J. C.; Becker, G. H., and Gray, J. P.: Acute Anterior Poliomyelitis, THE JOURNAL, Aug. 4, 1934, p. 342; Geiger, J. C.: Acute Anterior Poliomyelitis: The Possibility of the Spread as a Result of Direct Personal Contact—A Study of 385 Contacts, *California & West. Med.* **48**:245 [April] 1938) 181 close personal contacts of 68 proved cases were carefully studied. The 181 contacts were followed for at least six weeks by epidemiologists and the public health nurse. The disease developed in only 2 of the contacts. Ten of the remaining contacts showed at various periods of the time elevations of temperature, sore throat, muscular pains and malaise, but careful clinical observation and laboratory examination eliminated all as having clinical acute anterior poliomyelitis.

Despite the findings of Casey, the epidemiologist must seek a more definite answer as to the modes of spread of this disease or accept the evidence that the population immunity is not an inconsiderable factor, since acute anterior poliomyelitis affects very few persons in a community in comparison with other communicable diseases. It is unfortunate that departments of public health usually possess meager or no information as to the source or route of infection in cases reported, especially in epidemic periods.

J. C. GEIGER, M.D., San Francisco.

VENOGRAPHIC DIAGNOSIS OF THROMBOPHLEBITIS OF THE LOWER EXTREMITIES

To the Editor:—In the April 4 issue of THE JOURNAL appeared an article entitled "The Venographic Diagnosis of Thrombophlebitis of the Lower Extremities" by Dr. Arnold Starr and his associates. The authors describe a method of visualizing the deep venous system of the lower extremities as an aid in the diagnosis of thrombophlebitis. The technic that they use involves the injection of diodrast into a deep vein behind the external malleolus, which is found after making a small incison. This method is that of G. Bauer, who described it for the first time in the *Acta chirurgica Scandinavica*, published in 1940.

The studies made by Starr and his associates are interesting and significant, but I should like to call attention to a somewhat similar method of visualizing deep venous thrombosis which I published in 1939. This article entitled "Unilateral Enlargement of the Lower Extremities Accompanying Varicose Veins, with Roentgen Studies of 'Deep Venous Block,'" was published by the *American Journal of Roentgenology and Radium Therapy*. It described a simplified method of visualizing the deep venous system by the injection of the same reagent, diodrast. The difference between the two methods is simply in the choice of the vein for the injection.

The method that I described consisted of injection into any superficial vessel, while Starr cuts down on a deep vein for his injection. It is true that with my method the normal deep venous tree is not visualized, but in cases of block the deep vessels show up beautifully with this simple technic. It is also true that when no superficial vein can be found the more involved technic of Bauer and Starr is of value. The point I wish to make, however, is that a prior technic which has been adequately described in the literature should in my opinion be mentioned in an article which merely refines an already existing method of treatment.

H. I. BIEGELEISEN, M.D., New York.

USE OF SULFONAMIDE SOLUTIONS IN THE NOSE

To the Editor:—I read in THE JOURNAL, March 21, a communication from Dr. Walter D. Klestadt and a reply to this communication by Dr. Russell Fletcher concerning the use of sulfonamide solutions in the nose, and in view of the fact that there is some controversial discussion I should like to add something from my experience on the use of a solution of sodium sulfathiazole in the nose.

After publication of Dr. F. M. Turnbull's article last year I began using a 5 per cent solution of sodium sulfathiazole by means of nasal tamponage. These packs were inserted, for the most part, in the middle meatuses following the application of 5 per cent cocaine and were left in place from fifteen to thirty minutes. The frequency of treatment varied with different patients, sometimes daily, sometimes several days apart.

I have used this solution on more than 300 patients, and 1 patient had more than seventy-five applications over a period of six months. These patients were observed closely and at no time have I detected any sloughing of the nasal mucosa. True, there were some patients who did not tolerate the drug, as was manifested by reactions resembling an allergic rhinitis following its use. For the most part, patients were impressed with the fact that there was very little reaction following the treatment. There was less turgescence of the nasal mucosa hours later than they had experienced from other treatments.

We found that when the solution had been made up a few days it became quite irritating, as evidenced by sneezing and much turgescence a few minutes after application. This was

also corroborated by patients who were given solutions to use in the prescribed atomizers at home. One woman, in particular, had considerable nasal discomfort when she went back to using the spray after having had it for a previous cold about a month before.

I found the solution effective in certain types of sinusitis, namely those cases in which there is considerable thick, purulent secretion with a tendency to stickiness and crusting of the nasal mucosa. I have also used it in the Proetz displacement treatment but did not observe that it had any particular value used in this way over tamponage. Its use in cases of acute rhinitis, namely the so-called acute cold, were in general quite disappointing. It seemed to offer no short cut or quick relief for the symptoms of this well known malady.

My main object in writing this letter, however, was to say that if the use of sodium sulfathiazole in the nose has produced sloughing, I have failed to observe it.

FORREST W. MERICA, M.D., Lakewood, Ohio.

RESUSCITATION IN ASPHYXIA

To the Editor:—I noted with interest the article entitled "Resuscitation in Advanced Asphyxia" by Drs. George L. Birnbaum and Samuel A. Thompson and Mr. Eugene Ostrow, which appeared in THE JOURNAL on April 18. I approached this with an open mind and with the hope that I might find new information. However, having read the text carefully, I feel obliged to challenge its subject matter and what would appear to be its implications.

As to the subject matter, I refer the reader to page 1364, line 7, "either a specially fitted face mask and pharyngeal airway or a special tracheal catheter with rubber inflation cuff to prevent leakage." This casual reference to the basic approach to the technic advocated is not scientific. Any one at all familiar with the mechanical operation of a suck and blow apparatus is fully aware that it can operate only in an airway of guaranteed patency. Therefore, just what was the preparation of the airway in the experiments referred to and on which findings was the relative value of each technic measured?

Such an approach certainly does not serve to clarify a problem which the authors find confused. If the authors intend to go into subsequent detail, it would seem out of order to present the body of their observations and conclusions without prefacing them with the technical approach, which if placed at the end of the matter is not likely to be read.

Page 1367, line 17: "When respiration has been restored and acts 'out of step' with a mechanical resuscitator, it indicates the successful return of spontaneous respiration and it is time to desist from the use of mechanical resuscitation."

Theory and practice agree that to employ a practice known to be dangerous (inhibiting spontaneous rate and rhythm), in this case a matter of life and death and not merely a question of esthetic rhythm, is meddlesome, to say the least. Furthermore, if this spontaneous respiration is inhibited, how can it warn the operator to desist?

Finally, is it possible that the authors have missed the point of the need of muscle tone in artificial respiration? This, of course, has to do only with the recoil of the chest in the prone pressure technic following compression. It has nothing to do with spontaneous expiration following insufflation. In this instance a person at rest can be as flaccid as a collapsed toy balloon. The chest empties itself because it has been stretched, not because it possesses muscle tone. A thawed cadaver, two weeks old, will demonstrate a perfectly good expiration following insufflation. Suction is not needed to accomplish this.

The implications of this presentation should, it is felt, have been tempered by a clear reference differentiating the laboratory dog from the clinical patient. In ordinary laboratory reports this differentiation is apparent and confusion does not occur. In this presentation, however, there seems to be no hesitation in passing from the laboratory to the clinic and back again, implying the same values in the two. The implication read into this presentation by the average reader may be expected to be somewhat as follows: "Here is an article, a scientific article, from a research laboratory which keeps on repeating that the suck and blow technic, by a named apparatus, is the best technic, and here are figures to prove it. All we have to do is to get ourselves a suck and blow apparatus and our asphyxial problems will be at an end."

If there is confusion in the field of asphyxia, it is due to just this sort of gratuitous overlapping of laboratory and clinic without regard for the theoretical and practical gulf which separates the two. Because of the ease with which an exact knowledge and the correct treatment of the needs of a particular case may be avoided, by placing all responsibility on a mechanical robot, the prevention of asphyxial death is now and threatens to remain on the low level of commercial competition. Resuscitation apparatus should be regarded as a means to an end—the simpler it is, the safer it is. The care of the asphyxiated has not followed the classic formula "Follow the physiologic indications." Until it does, confusion will continue.

PALUEL J. FLAGG, M.D., New York.

TOXIC EFFECTS OF FUADIN AND ANTIMONY AND POTASSIUM TARTRATE

To the Editor:—In the *South African Medical Journal*, Nov. 8, 1941, page 440, E. Ross Marshall of New York is reported to have said, in comparing antimony and potassium tartrate with fuadin (*J. Nat. M. A.* **33**:105 [May] 1941) that "fuadin is the better drug since it is less toxic. . . . As it is much less toxic, almost no untoward symptoms are noted from its use." Similar statements have been made in regard to the use of antimony in the treatment of leprosy.

No thoughtful reader can think that a 6 per cent solution is as "toxic" as a powder containing from 36 to 39 per cent of the same drug, and an equivalent amount of the two solutions reveals that the solution of antimony and potassium tartrate is free of the undesirable effects of the pyrocatechol compounds.

Estimates of cure are difficult in instances in which extensive parasitic diseases may account for a raised eosinophil count and in infections with Schistosomum mansoni whose escaping ova are few, especially in cases of old infection or when most of the worms are males, but evidence is still needed to show that less than 0.5 Gm. of antimony will effect a permanent eradication of all the schistosomes from an infected person, and there is a widespread danger of resting content with the disappearance of symptoms which may easily be procured by any antimony compounds.

F. GORDON CAWSTON, M.D. (CANTAB.),
Durban Natal, South Africa.

SIR D'ARCY POWER

To the Editor:—With the approval of his son, Air Commodore Power, I am collecting material for a life of the late Sir D'Arcy Power. I shall be grateful if any of your readers who possess letters from Sir D'Arcy or other relevant material will be kind enough to send me copies. Originals, if lent, would be copied and immediately returned.

W. R. LEFANU,
Lincoln's Inn Fields,
London, W. C. 2.
Librarian, Royal College of Surgeons.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, May 9, page 221.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Various centers, June 22-24. *Part III.* Various centers, June or July. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral. Part II.* Atlantic City, June 6-7. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Oral. Groups A and B.* Cleveland, Jan. 14-15, 1943. Final date for filing application is Dec. 7. *Written.* Various centers, Nov. 16. Final date for filing application is Oct. 5. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Oct. 19. Final date for filing application is Sept. 1. Sec., Dr. William S. Middleton, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* New York, May 12-13. Sec., Dr. R. Glen Spurling, 404 Brown Bldg., Louisville, Ky.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* Baltimore, June 6 and Philadelphia, June 8. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral and Written.* Chicago, Jan. 9-10. Final date for filing application is Nov. 1. Sec., Dr. Guy A. Caldwell, 3503 Prytania St., New Orleans.

AMERICAN BOARD OF PATHOLOGY: *Oral and Written.* Richmond, Va., Nov. 9-10 Final date for filing application is Sept. 1. Sec., F. W. Hartman, Henry Ford Hospital, Detroit.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Sept. 18. *Oral.* Chicago, Nov. 2-3. Final date for filing application is July 1. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, December. Final date for filing application is Oct. 1. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

AMERICAN BOARD OF UROLOGY: If a sufficient number of applications are received an examination will be held in the east at the same time or shortly after one of the national meetings. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Right of Sanipractor or Optometrist to Render the Care to Be Provided Indigent Senior Citizens at State Expense.—An initiative measure (No. 141) adopted by the electorate of Washington in November 1940 provides senior citizen grants, that is, stated monthly cash payments to indigent senior citizens of the state. Section 15 of the measure provides:

> In addition to Senior Citizen Grants, the department (Social Security) shall provide for those eligible medical, dental, surgical, optical, hospital and nursing care by a doctor of recipient's own choosing; . . .

One Martin, an eligible senior citizen, requested authorization from the local agency charged with the administration of the law for treatment by a certain licensed sanipractor, a practitioner of a method of drugless healing legalized within restricted limits by state law. His application was denied and, in accordance with the provisions of the law, he appealed to the department of social security, state of Washington, which likewise refused his application. The superior court, Thurston County, however, reversed the order of the department and, in effect, ordered the department to authorize the treatment of Martin by the sanipractor, and the department appealed to the Supreme Court of Washington.

The question here for decision, said the Supreme Court, is the meaning to be given the word "doctor" as used in the section of the law quoted. The department contends that, by the use of that term, it was the intention to allow the recipient to have only such treatment as could be administered by a regularly licensed medical practitioner. On the other hand, Martin contends that it was the intention to give the recipient the right to choose any one authorized to give treatment, such as drugless healing, within the scope of the license which had been issued to such practitioner. If, continued the court, the contention of the department should be sustained, then the words in the statute "hospital and nursing care" would have so meaning. This is made obvious by assuming that the act had used only those words and that it had read as follows: "Additional Care: In addition to Senior Citizen Grants, the department shall provide for those eligible . . . hospital and nursing care by a doctor of recipient's own choosing. . . ." A statute should not be given an interpretation which would make it an absurdity when it is susceptible of a reasonable interpretation which would carry out the manifest intent of the legislature. Further, a statute should be so construed that, if it can be prevented, no clause, sentence or word shall be superfluous, void or insignificant. The drafters of the law here in question and the people who voted for the measure undoubtedly intended that every word used in section 15 should have some meaning. It was intended, by the use of the word "doctor," to include any person who was authorized to practice any of the healing arts specified, so long as such practitioner did not exceed the scope of his license or certificate.

The Supreme Court, accordingly, in effect, ordered the department to authorize treatment by the sanipractor at the expense of the state.

In a similar decision handed down the same day in *O'Neil* v. *Department of Social Security*, the Supreme Court also ordered the department, for the reasons stated in the Martin decision, to authorize optical care to be rendered another senior citizen by a licensed optometrist.—*Martin v. Department of Social Security, 121 P. (2d) 394; O'Neil v. Department of Social Security, 121 P. (2d) 396 (Wash., 1942).*

Malpractice: Failure to Instill Silver Nitrate Prophylactic into Eyes of Newborn Baby.—The plaintiff, an infant 1 year of age, by his next friend, instituted a malpractice action against the physician defendant for loss of his eyesight due to "gonococci infection," allegedly caused by the failure of the physician, who attended at his birth, to instill a silver nitrate prophylactic in his eyes. At the conclusion of the evidence a motion by the physician for a peremptory instruction in his favor was overruled and the jury returned a verdict in favor of the plaintiff. From a judgment on the verdict, the physician appealed to the Court of Appeals of Kentucky.

The motion of the physician for a peremptory instruction in his favor was based essentially on two contentions, namely (1) that negligence on his part had not been established and (2) that the evidence did not show that the negligence, if any, was the proximate cause of the injuries suffered by the plaintiff. The court believed, however, that the evidence conclusively established negligence on the part of the physician. The physician admitted that he did not place silver nitrate or any other prophylactic in the eyes of the plaintiff either at birth or any time thereafter. It appeared that the plaintiff was born about 5 o'clock in the morning and that when the physician attended the birth he had an old bottle of nitrate of silver which had crystallized, and the physician was "afraid to use it." He discussed the matter with the mother and told her that because of the hour the drug store was not open and if she had never been infected with gonorrhea it was not imperative to use silver nitrate but that if she had ever had the disease he would write a prescription, which could be filled at the drug store when it opened and be used in the eyes of the child. He returned later in the day to visit the mother but did not bring any silver nitrate with him. Physicians called by the plaintiff testified that it is the recognized practice of the medical profession in communities and neighborhoods similar to that involved in this case to drop silver nitrate in the eyes of a child immediately after delivery. A physician, said the court, is liable for an injury to his patient resulting from want of required care and skill or from omission to use reasonable care and diligence in his treatment of the patient. The standard of knowledge, skill and required care which physicians must possess and exercise is such reasonable and ordinary knowledge, skill and diligence as physicians in similar neighborhoods and surroundings ordinarily use under like circumstances. Certainly the evidence that the physician failed to place a prophylactic in the eyes of the newborn child is sufficient conclusively to establish negligence on his part in the light of the uncontra-

dicted medical testimony that in all localities physicians ordinarily use silver nitrate or some other prophylactic in the eyes of a child at birth and that reasonable care and diligence require such to be done.

As to the second contention involved in the physician's motion for a peremptory instruction in his favor, namely that the evidence did not show that the negligence of the physician, if any, was the proximate cause of the injuries, the court likewise thought that the evidence as to causation was sufficient to submit that issue to the jury. It appeared that the father of the plaintiff had become infected with gonorrhea some two years before the birth of the plaintiff, and while a microscopic examination made of a smear taken from the mother about ten days after the child's birth was reported to have been negative, the evidence was such as to indicate that the child had become infected from the mother at birth. There was evidence that forty-eight hours after birth the plaintiff's eyes became irritated, that twenty-four hours later they became very red and that on the fourth day after birth pus appeared in both eyes. Ten days after birth the child was pronounced totally blind from gonococcic infection. The physician made some attempt by the evidence he introduced to imply that the gonococcic infection in the child may have been due to handling after birth by the father or by a maid, who at the time seemed to have been infected with a chronic case of gonorrhea. The evidence seemed to indicate, however, that neither the father nor the maid touched the child until after the infection had set in. Further evidence, said the court, as to the existence of the infection at the time of birth is the fact that both eyes of the infant were infected. That condition, in reason, would be more apt to exist if the infection were obtained from the mother at birth than if it were contracted after birth from an outside agency. If the infection had appeared in but one eye, such fact would have inclined the mind to the opinion that the infection had come from an outside source. The fact that there is evidence that the infection could have come from the maid or from the father after the child was born merely raises an issue of fact for the determination of the jury, whose decision, once made, becomes final and binding on the appellate court. The court accordingly concluded that the trial court properly submitted the case to the jury.

However, in view of a remark made by the counsel for the plaintiff, which indicated that counsel for the defendant represented an insurance company, the Court of Appeals found it necessary to reverse the judgment and remand the case for a new trial.—*Walden v. Jones, 158 S. W. (2d) 609 (Ky., 1942).*

Malpractice: Alleged Failure Timely to Aspirate Infected Hip Joint.—The plaintiff, on Feb. 18, 1936, entered a small hospital operated by the physician defendant for treatment of pneumonia and was discharged as convalescent on March 7. Shortly after discharge he complained to the physician of aching joints, and medication was prescribed. Thereafter the patient's "trouble localized or settled in his left hip." On April 23, after a thorough physical examination, the physician made a tentative diagnosis of "acute infection, arthritis of left hip precipitated by trauma." Roentgenograms of the hip made at that time showed "normal bone texture, no evidence of periosteal thickening and no sign of cartilage destruction." Two days later, on the physician's suggestion, the patient again entered the hospital. He was put to bed and a Buck's extension was applied to the leg. Treatment that was given the patient between that date and May 29 consisted of the extension of the limb for about two weeks, constant heat, Oxoate B tablets, and other medication to induce sleep or relieve pain. Other roentgenograms were taken. During this time the patient complained constantly of severe pain. On May 29 the physician explored the hip joint with an aspirating needle and withdrew pus, which contained pneumococcus germs. That afternoon the physician made a posterior incision and established drainage. Thereafter the patient remained at the hospital under treatment until August 14, during which period drainage was maintained, the wound was dressed, ultraviolet and infra-red rays were applied, the limb was again extended for a period, some irrigation was attempted and medicine was given to relieve pain. On August 14 the patient was taken to a large clinic where by examination and roentgenograms it was discovered that the cartilage of the left hip had been destroyed. While in that clinic the sinus of infection was curetted, drainage maintained and a spica cast applied. The patient was discharged August 27 and thereafter visited the clinic in January, March and October 1937, during which visits different casts were applied. The drainage had not ceased until sometime before the last trip in October 1937. By that time the hip joint had fused and there was practically no motion in it, and as an end result the patient had a stiff hip and an impaired knee. Eventually the patient brought suit against the physician defendant for malpractice, asserting in substance that the physician defendant was negligent in that although he had determined that the patient was suffering from an infectious arthritis on April 23, 1936 he failed to aspirate the hip and establish drainage until May 29, 1936. At the close of the patient's evidence, the trial court directed a verdict in favor of the physician and the patient appealed to the Supreme Court of South Dakota.

Because, said the Supreme Court, the central issues of this case, namely negligence and its causal connection with the injury suffered by the patient, turn on scientific questions that laymen are not qualified by learning or experience to answer, the patient was required to establish those elements by the testimony of expert witnesses. To establish these elements the patient called two physicians. One of these experts testified that a physician would want to be certain that there was pus before he aspirated or opened a hip joint. The other physician was careful to predicate his testimony on the assumption that the attending physician knew that he was dealing with a septic hip. In view of these facts, said the court, there is room for grave doubt as to the sufficiency of the evidence produced by the patient to warrant an inference of negligence on the part of the physician. However, it is unnecessary for us to determine that issue and we assume, but do not decide, that there is sufficient evidence in the record to support an inference of negligence in failing to establish drainage from the hip at an earlier stage of the treatment. Even so, continued the court, the evidence must be sufficient to establish a causal connection between the assumed negligence of the physician and the lamentable resulting condition of the patient's hip. The standard of treatment established by the testimony of the physicians called to testify by the patient included drainage of the infected area as soon as the physician was certain of its septic condition. However, one of the experts, addressing himself to the nature of the patient's malady, testified that "there is little hope of preserving joint motion even with early drainage, and . . . such an infection is very difficult to treat, and very slow in healing." Further, both of the physicians called by the patient treated the patient during the final period of his illness and gave direct testimony as to his condition. Speaking from personal knowledge of his case, they asserted that they discovered nothing in his condition which indicated neglect on the part of the defendant physician. In other words, both of these physicians viewed the patient's unfortunate condition as an expected result of the infection. The most that can be gathered from the evidence as bearing on the issue of causation is that early drainage and exact classification of the attacking organism improves the prognosis. Thus the record discloses that testimony of the physician witnesses called by the patient attributed the patient's ultimate condition to either of two possible causes, and only if the injury to the patient resulted from one of those causes—namely negligence on the part of the physician—would the physician be legally liable. As was said by the Supreme Court of Minnesota in *Yates* v. *Gamble*, 198 Minn. 7, 268 N. W. 670: "In negligence cases and especially in malpractice cases, proof of causal connection must be something more than consistent with the plaintiff's theory of how the claimed injury was caused. The burden is on plaintiff to show that it is more probable that the harm resulted from some negligence for which defendant was responsible than in consequence of something for which he was not responsible." An inference, continued the court, that it is more probable that the patient's impairment resulted from the defendant's assumed negligence than from

the normal ravages of the infection is without substantial support in the expert testimony and is therefore without substantial support in the evidence. Such an inference would rest on speculation and conjecture and a verdict based thereon could not stand.

The Supreme Court accordingly concluded that the trial court had not erred in directing a verdict in favor of the physician.—*Lohr v. Watson, 2 N. W. (2d) 6 (S. D., 1942).*

Malpractice: Unjustifiable Detention of Patient in Hospital After Operation.—The plaintiff, in this action against the defendant physician, alleged that she entered the Claxton Hospital, a private hospital operated by the defendant, for the purpose of undergoing an operation for the removal of a tumor by the defendant, that the operation was successful and that the plaintiff was advised that she would be able to leave the hospital in about twelve days. On the eleventh day, it was further alleged, the defendant forcibly administered an injection into her arm which "doped and dumfounded her faculties" and rendered her unable to move, and similar injections were made thereafter at intervals, necessitating a stay in the hospital for over four months. This was done by the defendant, it was alleged, in conspiracy with relatives of the plaintiff, one of whom was a physician, who desired to obtain control of the plaintiff's property. As a result, the plaintiff alleged that she was damaged to the extent of more than $3,500. The defendant's demurrers to the petition were sustained by the trial court and the action was dismissed. The plaintiff then appealed to the court of appeals of Georgia, division No. 2.

The defendant contended that the plaintiff's petition embodying the aforementioned allegations failed to state a cause of action. The court held that the defendant had a twofold duty toward the plaintiff, first as a physician employed to perform an operation and second as the operator of a private hospital in which the plaintiff became his patient. In his capacity as a physician, the defendant was required to exercise such reasonable degree of care and skill as was needed to accomplish the plaintiff's recovery. Instead of ministering to her in such a way as to facilitate her recovery of good health, it was alleged that she was forced by the defendant, through consultation and conspiracy with others, to submit to injections "of dope or other powerful drug," and that this rendered her incapable for several months of resisting the unlawful practices named. "Where a surgeon enters into an agreement with a person merely to perform a certain operation, and the surgeon, in violation of the contract, goes farther, without an emergency, and performs another operation which is unauthorized by the agreement, or by an emergency necessitating the additional operation, and injury results to the patient, the surgeon cannot relieve himself from liability by showing skill and care in the other operation." *Perry* v. *Hodgson,* 168 Ga. 678, 148 S. E. 659. The court of appeals admitted that it was sometimes necessary for a physician to administer a drug to a patient. The plaintiff alleged, however, that the injection was only for the purpose of frustrating her recovery rather than aiding it. Thus, even though the operation and the subsequent injection were each successfully and skilfully performed, the court of appeals concluded that if the allegations were true the defendant did not measure up to the degree of care and skill required of him on behalf of his patient. In his capacity as owner of the private hospital in which the plaintiff was a patient, continued the court, the defendant was required to exercise such reasonable care in looking after and protecting the patient as the patient's condition required. If the defendant conspired with other persons to delay the plaintiff's departure from the hospital and administered drugs to the plaintiff in furtherance of that conspiracy, he failed to use such care as was necessary properly to supervise the plaintiff and adequately protect her interests. The court therefore concluded that the allegations of the plaintiff's complaint clearly charged the defendant with malpractice and that the trial court erred in sustaining the demurrers and in dismissing the action.—*Lord v. Claxton, 8 S. E. (2d) 657 (Ga., 1940).*

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, N. J., June 8-12. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Atlantic City, N. J., June 8-9. Dr. J. Harvey Black, 1405 Medical Arts Bldg., Dallas, Texas, Secretary.

American Association for the Study of Goiter, Atlanta, Ga., June 1-3. Dr. Thomas C. Davison, 478 Peachtree St. N.E., Atlanta, Ga., Secretary.

American Association for the Surgery of Trauma, Boston, June 4-6. Dr. Gordon M. Morrison, 520 Commonwealth Ave., Boston, Secretary.

American Association of Genito-Urinary Surgeons, Hershey, Pa., May 27-29. Dr. Charles C. Higgins, 2020 East 93d St., Cleveland, Secretary.

American Association of Oral and Plastic Surgeons, New York, May 28-30. Dr. Frederick A. Figi, 102 Second Avenue S.W., Rochester, Minn., Secretary.

American Broncho-Esophagological Association, Atlantic City, N. J., June 8-9. Dr. Paul H. Holinger, 700 North Michigan Blvd., Chicago, Secretary.

American College of Chest Physicians, Atlantic City, N. J., June 6-8. Dr. Paul H. Holinger, 500 North Dearborn St., Chicago, Secretary.

American Dermatological Association, Hot Springs, Va., May 31-June 4. Dr. Harry R. Foerster, 208 East Wisconsin Ave., Milwaukee, Secretary.

American Diabetes Association, Atlantic City, N. J., June 7. Dr. Cecil Striker, 630 Vine Street, Cincinnati, Secretary.

American Gastro-Enterological Association, Atlantic City, N. J., June 8-9. Dr. J. Arnold Bargen, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Gynecological Society, Skytop, Pa., June 15-17. Dr. Howard C. Taylor Jr., 842 Park Ave., New York, Secretary.

American Heart Association, Atlantic City, N. J., June 5-6. Dr. Howard B. Sprague, 50 West 50th St., New York, Secretary.

American Human Serum Association, Atlantic City, N. J., June 8. Dr. William L. Wheeler, 348 West 22d St., New York, Secretary.

American Laryngological Association, Atlantic City, N. J., May 25-27. Dr. Charles J. Imperatori, 108 East 38th St., New York, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, N. J., June 1-3. Dr. C. Stewart Nash, 277 Alexander St., Rochester, N. Y., Secretary.

American Medical Women's Association, Atlantic City, N. J., June 6-7. Dr. Ada Chree Reid, 102 East 22d St., New York, Secretary.

American Neurological Association, Chicago, June 4-6. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., June 1-3. Dr. Eugene M. Blake, 303 Whitney Ave., New Haven, Conn., Secretary.

American Orthopedic Association, Baltimore, June 3-6. Dr. Charles W. Peabody, 474 Fisher Bldg., Detroit, Secretary.

American Otological Society, Atlantic City, N. J., May 28-29. Dr. Isidore Friesner, 101 East 73d St., New York, Secretary.

American Physiotherapy Association, Lake Geneva, Wis., June 28-July 3. Miss Evelyn Anderson, Stanford University, Calif., Secretary.

American Proctologic Society, Atlantic City, N. J., June 7. Dr. William H. Daniel, 1930 Wilshire Blvd., Los Angeles, Secretary.

American Psychiatric Association, Boston, May 18-22. Dr. Winfred Overholser, St. Elizabeths Hospital, Washington, D. C., Secretary.

American Radium Society, Atlantic City, N. J., June 8-9. Dr. Axel N. Arneson, 4952 Maryland Ave., St. Louis, Secretary.

American Society of Clinical Pathologists, Philadelphia, June 5-7. Dr. Alfred S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Therapeutic Society, Atlantic City, N. J., June 5-6. Dr. Oscar B. Hunter, 1835 Eye St. N.W., Washington, D. C., Secretary.

American Urological Association, New York, June 1-4. Dr. Clyde L. Deming, 789 Howard Ave., New Haven, Conn., Secretary.

Arizona State Medical Association, Prescott, May 25-30. Dr. W. Warner Watkins, 15 East Monroe St., Phoenix, Secretary.

Association for the Study of Internal Secretions, Atlantic City, N. J., June 8-9. Dr. Henry H. Turner, 1200 North Walker St., Oklahoma City, Secretary.

Connecticut State Medical Society, Middletown, June 3-4. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Illinois State Medical Society, Springfield, May 19-21. Dr. Harold M. Camp, 224 South Main St., Monmouth, Secretary.

Maine Medical Association, Poland, June 21-23. Dr. Frederick R. Carter, 142 High Street, Portland, Secretary.

Massachusetts Medical Society, Boston, May 26-27. Dr. Michael A. Tighe, 8 Fenway, Boston, Secretary.

Minnesota State Medical Association, Duluth, June 28-July 1. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.

Montana, Medical Association of, Missoula, July 8-10. Dr. Thomas F. Walker, 206 Medical Arts Bldg., Great Falls, Secretary.

National Gastroenterological Association, New York, June 3-5. Dr. G. Randolph Manning, 1819 Broadway, New York, Secretary.

New Mexico Medical Society, Santa Fe, June 25-28. Dr. L. B. Cohenour, 221 W. Central Avenue, Albuquerque, Secretary.

New York State Association of Public Health Laboratories, Cooperstown, May 18. Miss Mary B. Kirkbride, New Scotland Ave., Albany, Secretary.

North Dakota State Medical Association, Jamestown, May 18-20. Dr. L. W. Larson, 221 Fifth St., Bismarck, Secretary.

Pacific Northwest Medical Association, Portland, Ore., June 17-20. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Secretary.

Rhode Island Medical Society, Providence, June 3-4. Dr. William P. Buffum, 122 Waterman St., Providence, Secretary.

Society of Surgeons of New Jersey, Montclair, May 27. Dr. Walter B. Mount, 21 Plymouth Street, Montclair, Secretary.

South Carolina Medical Association, Myrtle Beach, May 19-21. Dr. Julian P. Price, 105 West Cheves St., Florence, Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

11:261-292 (Feb.) 1942

Peripheral Circulatory Failure (Shock) in Internal Medicine. B. H. Wiesel, Tuscaloosa.—p. 261.
Psychiatric Considerations in Obstetrics. J. R. Garber, Birmingham.—p. 263.
Treatment of Eyestrain with Vitamin B Complex: Preliminary Report. A. C. Gipson, Gadsden.—p. 265.
Lipid Pneumonitis. D. B. Monsky and C. R. Lafferty, Montgomery.—p. 267.
The Eye, with Particular Reference to Abnormalities. J. W. Allen, Dothan.—p. 269.

American J. Orthodontics and Oral Surgery, St. Louis

28:73-134 Orthodontics (Feb.) 1942. **Partial Index**

65-120 Oral Surgery

Orthodontics

Consideration of Etiology. P. E. Adams, Boston.—p. 105.

Oral Surgery

*Adenocarcinoma of Maxilla. K. H. Thoma, Boston.—p. 65.
Osteomyelitis Arising from Periodontium. R. H. Ivy and T. J. Cook, Philadelphia.—p. 86.
Acute Monocytic Leukemia: Case. S. P. Mallett and W. C. Guralnick, Boston.—p. 95.
*Sulfathiazole Therapy in Cellulitis of Face and Neck. C. B. Kayne, West New York, N. J.—p. 98.
Clinical Use and Toxic Reactions of Sulfonamide Compounds. C. F. Garvin, Cleveland.—p. 102.
Halitosis in Relation to Oral Diagnosis. B. B. Crohn, New York.—p. 109.

Adenocarcinoma of Maxilla.—Thoma reports 5 cases of adenocarcinoma of the maxilla and discusses the invasive character of the tumor and its tendency to recur after operation and to extend into the paranasal sinuses. Osseous and visceral metastasis may occur. Therefore, adenocarcinoma should receive prompt and radical treatment by a wide excision including the adjacent bone and followed by irradiation. Local recurrences are common and should be dealt with immediately, or the prognosis will be poor.

Sulfathiazole Therapy in Cellulitis.—Kayne employs the following treatment for early cellulitis: He applies cold compresses externally for fifteen minutes of every hour for the first twenty-four to forty-eight hours, wet warm compresses externally, when definite fluctuation is anticipated and when it is desirable to hasten pointing of the abscess, and irrigation with a hot 12 per cent solution of sodium sulfate. Magnesium sulfate sometimes causes patients to complain of nausea; besides, sodium sulfate is more hygroscopic. The treatment of cellulitis with definite abscess formation is early incision, drainage and irrigation at home with a 50 per cent urea solution. A dressing saturated in urea should be applied and changed every day until the abscess is evacuated. Urea eliminates fetid odor and aids liquefaction. Prompt and energetic treatment with sulfanilamide is imperative for patients who have a persistent temperature of 102 F. or more after incision and treatment with sulfathiazole for those who appear toxic and may have a secondary streptococcic or staphylococcic infection. Rest in bed is important. Patients given sulfathiazole should be under constant supervision. If a high temperature continues even though the infection is receding and the general condition is improving, treatment with sulfathiazole should be withdrawn. Such reactions as nausea, vomiting, headache or dizziness are common but not alarming. If vomiting is severe, the drug should be given in milk or rectally. The patient with advanced diffuse suppurative cellulitis with systemic complications, especially if bacteremia is present, should have the benefit of intravenous infusion of saline and dextrose solutions, sulfathiazole, blood transfusion and neoarsphenamine. Sulfathiazole and urea have proved beneficial adjuncts in the treatment of cellulitis of the face and neck.

Archives of Internal Medicine, Chicago

69:165-368 (Feb.) 1942

Calcificaton of Pancreas. A. B. King and J. M. Waghelstein, Baltimore.—p. 165.
Relation of Calcium and Lipids to Acute Pancreatic Necrosis: Report of Fifteen Cases, in One of Which Fat Embolism Occurred. H. A. Edmondson and I. A. Fields, Los Angeles.—p. 177.
*Capsular Polysaccharide in Blood of Patients with Pneumococcic Pneumonia: Detection, Incidence, Prognostic Significance and Relation to Therapies. S. C. Bukantz, P. F. de Gara and J. G. M. Bullowa, New York.—p. 191.
Retinal Arteriovenous Nicking: Relation to Enlargement of Heart in Ambulatory Patients with Hypertension. S. Sh[illegible]ourne, J. L. Hawley, Dallas, Texas, and A. S. McGee, San Angelo, Texas.—p. 213.
Fiber Dissociation in Peripheral Neuropathy. H. Wortis, M. H. Stein and N. Jolliffe, New York.—p. 222.
*Coccidioidal Arthritis: Report of Case in Which Ankles Were Involved and Condition Was Unaffected by Sulfanilamide and Roentgen Therapy. E. F. Rosenberg, M. B. Dockerty and H. W. Meyerding, Rochester, Minn.—p. 238.
*Edema with Unexplained Hypoproteinemia: Syndrome of Defective Formation Serum Proteins in Absence of "Loss and Lack" of Protein and Demonstrable Hepatic Disease. D. A. Rytand, San Francisco.—p. 251.
Destructive Osseous Lesions in Early Syphilis. F. W. Reynolds and H. Wasserman, Baltimore.—p. 263.
Diseases of Nutrition: Review of Certain Recent Contributions. H. R. Butt, W. V. Leary and R. M. Wilder, Rochester, Minn.—p. 277.
Diseases of Metabolism: Review of Certain Recent Contributions. Alice G. Hildebrand and E. H. Rynearson, Rochester, Minn.—p. 344.

Capsular Polysaccharide in Blood of Patients with Pneumonia.—Bukantz and his associates determined the circulating capsular polysaccharide in the blood of 135 patients treated for pneumococcic pneumonia. In earlier studies it was observed that the presence of free polysaccharide, which is more rapidly detectable than bacteremia, makes the prognosis grave. To determine the presence of circulating capsular polysaccharide, 0.5 cc. of a patient's serum is placed into each of three 10 by 75 mm. pyrex tubes and 0.5 cc. of the optimal dilution of homologous type specific rabbit antibody solution is added to the first tube, 0.5 cc. of a heterologous rabbit antibody solution to the second tube and 0.5 cc. of physiologic solution of sodium chloride to the third tube. Six additional positive and negative control tubes are prepared. All tubes are centrifuged at 2,000 revolutions per minute for thirty minutes. When capsular polysaccharide is present in the serum a precipitate appears in the first tube but not in the second and third. The controls yield the expected results. Circulating capsular polysaccharide was present in the blood of 16 of the 135 patients; 11 had type III, 3 type VII and 2 type VIII pneumococcus pneumonia, an incidence of 17.9 per cent for the three types of pneumococcus. There were 16 deaths in the total series; 10 among the 16 in whose serum capsular polysaccharide was present. Pneumococci of type III form large capsules and produce large quantities of capsular polysaccharide. The poorer response to serum therapy of infection (7 of the 11 patients died) caused by this pneumococcus as compared with the response of infection due to other types of pneumococci may be due to this characteristic. It is also possible that the carbohydrate of type III pneumococcus is less firmly bound to the organism than is the carbohydrate of other types of pneumococci. The increased fatality rate among the patients with a positive reaction for circulating capsular polysaccharide is not correlated with the number of lobes involved. It has been demonstrated that the growth inhibition and the pneumococcidal action of sulfapyridine in vitro is not affected by the addition of capsular polysaccharide. Accordingly, the mechanism by which capsular polysaccharide increases the fatality rate must be sought in the effect of that substance on the immune mechanisms important to recovery. Capsular polysaccharide has been demonstrated to be specifically antiopsonic and therefore specifically to inhibit phagocytosis, to make avirulent pneumococci virulent and to augment the virulence of virulent organisms. The effectiveness of sulfapyridine in pneumococcic infection results from its bacteriostatic action and from the immune substances which develop during the disease. An increase of capsular polysaccharide in the blood of the patient with pneumococcic pneumonia may be accom-

panied by "neutralization" of antibodies. Furthermore, Tunnicliff suggested that the phagocytosis that sulfapyridine promotes in cultures of plain broth but not in cultures of dextrose broth may be related to an increased concentration of capsular polysaccharide in the cultures of dextrose broth, as compared with the concentration in those of plain broth. Specific antibody should be administered to patients in whom circulating capsular polysaccharide is detected so as to neutralize the anti-immune effects of the latter.

Coccidioidal Arthritis.—Rosenberg and his co-workers report the third case of coccidioidal infection encountered at the Mayo Clinic. A man aged 25 came to the clinic with pain and swelling of both ankles of a year's duration. He had worked in the San Joaquin Valley for four years previous to the onset of his illness, when he had a dry cough, generalized aches, headache and increase of temperature up to 104 F. After three days of fever a generalized rash appeared on the face, trunk and extremities. A low grade fever persisted. Four months later a number of red, indurated lesions appeared on the dorsum of each hand and on the outer aspect of the left thigh. The lesions persisted for two or three weeks, were slightly painful and healed without leaving scars. A month later the patient returned to work, although he continued to have a low grade fever in the afternoon. Three days after his return to work swelling appeared about the left foot and ankle, with pain on weight bearing, and one week later the right foot and ankle swelled and became painful. In a year pain on weight bearing became intolerable and the patient had to stop working. Laboratory studies at the clinic did not reveal any striking abnormalities. His condition bore a resemblance to tuberculosis, but the history and the bilateral involvement were atypical. The posteromedial aspect of the right ankle was incised, and part of a sac filled with cheesy necrotic material was removed for examination. The wound healed by primary intention. Search with high magnification disclosed large, double contoured, refractile bodies containing minute, rounded, sporelike forms. A diagnosis of coccidioidal granuloma was made. The spore filled "capsules" contained the organism Coccidioides immitis. Sulfanilamide and roentgen irradiation over the ankles proved ineffective. At the time of the patient's dismissal from the clinic his condition seemed to be essentially unaltered.

Edema with Unexplained Hypoproteinemia.—Rytand discusses the occurrence of edema with hypoproteinemia apparently due to defective protein formation in the serum in a young woman with no apparent loss or lack of protein and without a hepatic or renal disorder. Four similar cases have already been reported. The syndrome, an inexplicably defective formation of serum proteins, may be but an exaggerated expression of the varying abilities of different persons to form serum protein; while ordinarily loss of protein or nitrogen is required to unmask such differences, here the defect appears spontaneously. Although some plasma protein is formed in the liver, the bone marrow (or the reticuloendothelial system) may be another site.

Archives of Neurology and Psychiatry, Chicago

47:353-518 (March) 1942

Encephalitis with Intranuclear Inclusion Bodies: Clinicopathologic Study. A. J. Akelaitis and L. J. Zeldis, Rochester, N. Y.—p. 353.
Variations in Electroencephalogram Associated with Electric Shock Therapy of Patients with Mental Disorders. B. L. Pacella, S. E. Barrera and L. Kalinowsky, New York.—p. 367.
Changes in Brain After Electrically Induced Convulsions in Cats. B. J. Alpers and J. Hughes, Philadelphia.—p. 385.
Experimental Pharmacology of Postencephalitic Parkinson's Disease. J. Loman, P. G. Myerson and A. Myerson, Boston.—p. 399.
Multiple Sclerosis in the American Negro. L. C. Kolb, Baltimore. —p. 413.
Human Pyramidal Tract: V. Postnatal Changes in Axons of Pyramids. A. M. Lassek, Charleston, S. C.—p. 422.
Otitic Thrombosis of Cerebral Sinuses and Veins Simulating Multiple Brain Tumors. M. Keschner and C. Davison, New York.—p. 428.
Graphic Rorschach Test I. G. N. Rochlin and Kate N. Levine, Newtown, Conn.—p. 438.
Electroencephalographic Effects of Acute Increases of Intracranial Pressure. F. M. Forster and L. F. Nims, New Haven, Conn.—p. 449.
Two Minute Clinical Test for Measurement of Intellectual Impairment in Psychiatric Disorders. M. Hayman, Compton, Calif.—p. 454.
Primary Degeneration of Corpus Callosum (Marchiafava's Disease): Report of Second American Case. M. G. Bohrod, Miami Beach, Fla. —p. 465.
Spina Bifida with Meningocele: Occurrence in Two Children of Same Family. B. H. Shulman, Brooklyn.—p. 474.

Arkansas Medical Society Journal, Fort Smith

38:205-224 (March) 1942

Caudal Anesthesia in Proctologic Surgery. H. A. Causey, Pine Bluff. —p. 205.
Replacement Therapy of Gonadotropics (Female). G. R. Siegel, Clarksville.—p. 207.
Satisfactory Suprapubic Cystotomy. G. W. Reagan and J. N. Roberts, Little Rock.—p. 210.

Canadian Medical Association Journal, Montreal

46:111-208 (Feb.) 1942

Studies on Pinworm Infections: III. Tests with Phenothiazine in Treatment of Pinworm Infections. M. J. Miller and Della Allen, Ste. Anne de Bellevue, Que.—p. 111.
Crush Syndrome. H. R. Robertson and W. H. Mathews, Montreal. —p. 116.
*Inefficacy of Sulfapyridine in Influenza. J. D. Adamson and R. O. Flett, Winnipeg, Man.—p. 121.
Lobar Pneumonia Treated by Means of Sulfapyridine and Sulfathiazole: Results in 181 Cases. E. S. Mills and E. S. Murray, Montreal. —p. 123.
Lipofibrosarcoma of Kidney. R. Pearse, Toronto.—p. 127.
Renal Lesions with Negative Urine Findings. E. R. Hall, Vancouver, B. C.—p. 129.
Troublesome Skin Diseases in Infancy and Childhood. A. R. Birt, Winnipeg, Man.—p. 132.
*Prognosis and Treatment of Staphylococcic Septicemia. N. W. McLellan and A. Goldbloom, Montreal.—p. 136.
Bronchiectasis. R. C. Laird, Toronto.—p. 143.
Coronary Disease and Occupation. F. G. Pedley, Montreal.—p. 147.
Radiologic Findings in Terminal Ileum and Proximal Colon: Twenty-Five Year Postoperative Retrospect. L. J. Carter, Brandon, Man. —p. 151.
Induction of Labor: Inductions, Methods and Dangers. W. S. Holmes, Saskatoon, Sask.—p. 155.
Orthostatic Hypotension: Report of Case. S. T. Laufer, Halifax, N. S. —p. 160.
Sequelae of Intraspinal Anesthesia. G. D. Stanley, Calgary, Alta. —p. 164.

Inefficacy of Sulfapyridine in Influenza.—Adamson and Flett observed that the sequence of events in patients with uncomplicated influenza treated and not treated with sulfapyridine is not dissimilar. Of 68 men from the active service forces with influenza, 42 were and 26 were not given sulfapyridine. The epidemic occurred during nine days. All the patients were given full bed care, and treatment was started on the first day in 6, on the second day in 30 and on the third day in 32. The pulse rate and the elevated temperature both had fallen to normal by the sixth day in the two groups of patients. However, since pneumonia due to secondary bacterial invasion is the chief complication in influenza, it is justifiable to prescribe prophylactic doses of sulfapyridine or sulfathiazole for all patients with influenza: 0.5 Gm. three or four times a day will inhibit the growth of secondary invaders, and if this dose is given only for four days toxic effects will rarely occur.

Septicemia.—McLellan and Goldbloom suggest that some of the recent improvement in the mortality rate from staphylococcic septicemia is the result of the more frequent diagnosis of mild cases. Depending on conditions there is likely to be a considerable variation in the percentage of deaths in different institutions. A possible individual prognostic basis, with rare exceptions applicable to the authors' cases, was that a patient who had a history of a recently healed staphylococcic infection or in whom the infection was well localized and the colony count on blood culture was low survived, while a patient with no such history or with a spreading infection and a high colony count died. The patient whose history of localization and whose colony count were contradictory fell in the intermediate group: either he survived or his death was delayed. The lives of 2 patients who might otherwise have died were possibly saved by the intensive treatment of 1 with antitoxin and of the other with antitoxin and sulfathiazole. However, of 33 patients similarly treated 17 died and 16 survived, and therefore it appears that the localization and healing of an infection are the only two determining points for the prognosis. The experimental value of antitoxin, antibacterial serum and the sulfonamide drugs is discussed, and it is suggested that these be combined in therapy in human disease.

Cancer Research, Baltimore

2:79-156 (Feb.) 1942

Spectroscopic Study of Biologic Extracts: I. Urine. K. Dobriner, G. I. Lavin and C. P. Rhoads, New York.—p. 79.

Id.: II. Detection, Isolation and Biologic Effects of Metabolites of 1, 2, 5, 6-Dibenzanthracene. K. Dobriner, C. P. Rhoads and G. I. Lavin, New York.—p. 95.

Foster Nursing and Growth of Transplantable Leukemias in Mice. L. W. Law, Bar Harbor, Maine.—p. 108.

Character of Changes Occurring in Course of Transplantation of Two Strains of Lung Tumors in Mice. C. Breedis, T. Robertson, R. S. Osenkop and J. Furth, New York.—p. 116.

Studies in Malignant Tumors of Testis: IV. Bilateral Testicular Cancer: Incidence, Nature and Bearing on Management of Patient with Single Testicular Cancer. J. B. Hamilton and J. B. Gilbert, New Haven, Conn.—p. 125.

Radioactive Phosphorus as Therapeutic Agent in Malignant Neoplastic Disease. J. M. Kenney, New York.—p. 130.

Glycogen in Walker Tumor 256. H. A. Ball, San Diego, Calif.; H. F. Schott, Los Angeles, and L. T. Samuels, Minneapolis.—p. 146.

Endocrinology, Springfield, Ill.

30:175-354 (Feb.) 1942. Partial Index

Pituitary Diabetes in Cat: Recovery Following Insulin or Dietary Treatment. F. D. W. Lukens and F. C. Dohan, Philadelphia.—p. 175.

Study of Specificity of Anti-Insulin Effect. H. Jensen, Kalamazoo, Mich.; J. F. Grattan and G. W. Hart, New Brunswick, N. J.—p. 203.

Creatine-Creatinine Metabolism and Hormones: VIII. Effect of Incubation of Different Tissues With and Without Pitocin, Pitressin and Thyroxin on Creatine-Creatinine Equilibrium in Vitro. H. H. Beard, New Orleans.—p. 208.

Protective Action of Cardiac Glycosides and Adrenal Cortical Hormone Against Thyroxin. L. W. Kinsell, East Stroudsburg, Pa.; F. A. Zillesson, Easton, Pa.; A. M. Smith and J. Palmer.—p. 221.

*Steroid Excretion in Cancerous and Noncancerous Persons: I. The 17-Ketosteroids. W. H. Pearlman, Worcester, Mass.—p. 270.

Interaction of Ovarian Hormones in Experimental Menstruation. F. L. Hisaw, Cambridge, Mass.—p. 301.

Does Estrogen Substitution Materially Inhibit Pituitary Gonadotropic Potency? C. G. Heller, Detroit; Emily J. Heller and E. L. Sevringhaus, Madison, Wis.—p. 309.

Percutaneous Potency of Esterified and Nonesterified Estradiol. E. Oppenheimer, R. R. Greene, Chicago, and M. W. Burrill, Summit, N. J.—p 317.

Occurrence of Urinary Calculi in Inbred Strain (CsH) of Mice Treated with Estrogen. J. R. Schenken, E. L. Burns and W. M. McCord, New Orleans.—p. 344.

Excretion of Steroids and Cancer.—Pearlman analyzed the pooled urine of men with carcinoma of the intestine and of the bladder and the pooled urine of women with carcinoma of the breast and of the uterus and the urine of men and women without cancer for the 17-ketosteroids. The results show that noncancerous persons of either sex have a higher total 17-ketosteroid output and a definitely higher output of digitonin precipitable hydroxyketones than do cancerous persons. Furthermore, men without cancer excrete roughly twice as much of the 17-ketosteroid compounds as do women without carcinoma. This ratio held for all the fractions studied. On the other hand, men and women with cancer tend to excrete approximately the same amount of neutral 17-ketosteroids. This was equally true for all the fractions analyzed.

Georgia Medical Association Journal, Atlanta

31:39-78 (Feb.) 1942

Types of Sterility in Female That Are Amenable to Treatment. E. H. Greene, Atlanta.—p. 39.

Nephroptosis: Pyelographic Study, Clinical Features and Surgical Treatment. S. J. Sinkoe, M. F. Fowler, Atlanta, and E. P. Niceley, Knoxville, Tenn.—p. 43.

Suppurative Processes In and Around Kidneys. S. A. Kirkland, Atlanta.—p. 54.

When to Operate for Urinary Calculi. R. Bell, Thomasville.—p. 58.

*Epidemic Pleurodynia. C. B. Fulghum, Milledgeville.—p. 63.

Traumatic Conditions of Wrist. F. G. Hodgson, Atlanta.—p. 66.

Epidemic Pleurodynia.—Fulghum states that, between July 15 and Sept. 1, 1940, 28 cases of epidemic pleurodynia, a rare or unrecognized condition in the South, occurred in Milledgeville and Baldwin County, Ga. The age of the patients varied from 13 months to 64 years. The cause of the disease is unknown. The intravenous injection of blood taken from patients in various stages of the disease to volunteers failed to reproduce the disease. The examination of stained blood films did not reveal any plasmodia. Every patient had pharyngitis. The symptoms suggest involvement of the diaphragm or the intercostal muscles, as the pain roughly follows the diaphragmatic attachment to the thoracic wall. The sudden onset, character and location of the pain, the short high fever and the recurrent paroxysms constitute a clinical picture not difficult to recognize. Complete recovery is invariable. Morphine is required to relieve pain. Codeine and acetylsalicylic acid are of little use in controlling pain. Quinine, thought to be specific, was extensively used but did not alter the course of the disease.

Journal of Clinical Endocrinology, Springfield, Ill.

2:65-136 (Feb.) 1942

*Simmonds' Disease: Clinical Study with Review of Literature; Differentiation from Anorexia Nervosa by Statistical Analysis of 595 Cases, 101 of Which Were Proved Pathologically. R. F. Escamilla and H. Lisser, San Francisco.—p. 65.

Quantitative Variations of Pancreatic Islet Tissue in Mixed Series of Cases. W. Susman, Manchester, England.—p. 97.

*Clinical Studies with Male Hormone: V. Therapeutic Use of Pellets of Testosterone Propionate. J. E. Howard and H. J. Jewett, Baltimore.—p. 107.

Modifying Influence of Presence of Testicular Tissue on Efficacy of Testosterone Pellets in Treatment of Eunuchoid Patient. R. C. Grauer and M. Alexander Jr., Pittsburgh.—p. 111.

Clinical Results Obtained with Sublingual Administration of Methyl Testosterone: Menopausal Therapy. C. A. Joël, Basel, Switzerland. —p. 116.

Subjective Symptoms and Therapeutic Response in Control of Estrogen-Progesterone Therapy in Menstrual and Reproductive Disorders. P. F. Schneider, Evanston, Ill.—p. 120.

Weekly Urinary Pregnandiol Determinations Throughout Last Seven Months of Pregnancy in Two Cases of Primary Sterility. P. F. Schneider, Evanston, Ill.—p. 123.

Adrenal Tumor in Female Infant, with Hypertrichosis, Hypertension, Overdevelopment of External Genitalia, Obesity but Absence of Breast Enlargement. F. C. Neff, G. Tice, G. A. Walker and N. Ockerblad, Kansas City, Kan.—p. 125.

Pituitary Antagonists in Treatment of Bronchial Asthma: Estrogenic Therapy in Asthma. E. E. Beard and W. P. Garver, Cleveland. —p. 128.

Simmonds' Disease.—Escamilla and Lisser collected data on 595 cases suggesting Simmonds' disease through an exhaustive search of the literature, correspondence and their personal experience. In 101 of these the diagnosis was established both clinically and pathologically, and in 158 the clinical picture seemed typical but either the patients are still living or necropsy was not done. Many of the 158 may have been instances of anorexia nervosa. Of the rest of the cases, in 180 one or more of the cardinal clinical signs were lacking, in 43 the diagnosis seemed doubtful, in 15 destructive lesions of the pituitary body but no typical clinical signs were present, in 14 typical clinical signs but a normal pituitary were present and in 84 data were insufficient for classification. For purposes of comparison, 20 typical cases of anorexia nervosa were included. The most difficult problem is in differentiating between true Simmonds' disease and anorexia nervosa. Severe loss of weight and a low basal metabolic rate in a young unmarried woman who has never been pregnant favors the diagnosis of anorexia nervosa. A decided improvement or a return to normal health as a result of psychotherapy or after any treatment available at present (including endocrine therapy) further suggests this diagnosis. A claim of cure in any case of true Simmonds' disease is open to doubt unless a pituitary tumor has been removed successfully. Severe loss of weight, amenorrhea and a low basal metabolic rate in a woman of more than 30 years whose symptoms follow a postpartum hemorrhage and collapse or whose sella turcica is deformed or contains calcification and in whom in the course of the disease axillary and pubic hair is lost warrant a clinical diagnosis of Simmonds' disease. Psychopathic disturbances favor the diagnosis of anorexia nervosa but do not exclude Simmonds' disease.

Testosterone Propionate Pellets.—Howard and Jewett implanted in the infrascapular region of 15 patients with hypogonadism uniform machine-made testosterone propionate pellets. Absorption was rather rapid for the first few days after implantation, amounting to as much as 3 or more mg. a day from each 200 mg. pellet. After this, presumably with capsule formation, absorption steadied down to a surprisingly constant daily rate between 0.5 and 1 mg., and this rate continued for many days, falling gradually until the pellet became very small. The dose must be individualized. Thus, for a patient whose requirement for an adequate subjective effect is a minimum of 4 mg. a day, five pellets would be sufficient for a considerably shorter time than would be required for a patient whose required dose is

3 mg. a day. Therefore, in a patient in whom five pellets have become inadequate in four or five months an adequate absorption level can be provided by implanting two more pellets. When a new implant is considered, seven or eight pellets might be more suitable than five. The five 200 mg. pellets have been subjectively adequate for all the authors' patients to date for at least and usually more than three months. During the first week considerably more androgen is absorbed than is necessary, but no harmful results have been observed. The patients who have had implantation, injection and oral therapy have, with a single exception, preferred pellet therapy by implantation.

Journal of Experimental Medicine, New York

75:247-354 (March) 1942

Studies on Mechanism of Immunity in Tuberculosis: Fate of Tubercle Bacilli Ingested by Mononuclear Phagocytes Derived from Normal and Immunized Animals. M. B. Lurie, with collaboration of P. Zappasodi, Philadelphia.—p. 247.

Serologic Reactivity of Hydrolytic Products from Silk. K. Landsteiner, New York.—p. 269.

Synthesis of Inositol in Mice. D. W. Woolley, New York.—p. 277.

Quantitative Chemical Studies on Complement or Alexin: IV. Addition of Human Complement to Specific Precipitates. M. Heidelberger and M. Mayer, New York.—p. 285.

Effect of Undernourishment on Susceptibility of Rabbit to Infection with Vaccinia. D. H. Sprunt, Durham, N. C.—p. 297.

Reaction of Peripheral Blood Vessels to Angiotonin, Renin and Other Pressor Agents. R. G. Abell, Philadelphia, and I. H. Page, Indianapolis.—p. 305.

Human Allergy to Mammalian Serums. F. A. Simon, Louisville, Ky. —p. 315.

Studies on Lymphogranuloma Venereum: I. Development of Agents in Yolk Sac of Chicken Embryo. G. Rake and Helen P. Jones, New Brunswick, N. J.—p. 323.

Serologically Reactive Polysaccharides Produced Through Action of Bacterial Enzymes: I. Dextrin of Leuconostoc Mesenteroides from Sucrose. E. J. Hehre and J. Y. Sugg, New York.—p. 339.

Journal of Investigative Dermatology, Baltimore

5:1-48 (Feb.) 1942

Studies with Antigens: XII. Preparation and Properties of Concentrates of House Dust Allergen. C. H. Boatner and B. G. Efron, New Orleans.—p. 7.

Electrophoretic Skin Studies: I. Reaction to Common Grasses. H. H. Shilkret, New York.—p. 11.

Individual Action and Summation Effects of X-Radiation and Commonly Used Dermatologic Preparations on Skin of Albino Rabbit. F. E. Cormia, Montreal, Canada, and W. W. Bryan, London, Ont., Canada. —p. 15.

Further Studies in Arsphenamine Hypersensitiveness in Guinea Pigs: III. Investigations on Chemical Specificity of Skin Hypersensitiveness of Guinea Pigs to Old Arsphenamine. W. Frei, New York.—p. 29.

Experimental Blastomycosis in Mice. J. M. Hitch, Raleigh, N. C., with technical assistance of Jane S. Sharp.—p. 41.

Journal of Lab. and Clinical Medicine, St. Louis

27:569-704 (Feb.) 1942. **Partial Index**

Production of Pyrogen by Some Bacteria. Co Tui and M. H. Schrift, New York.—p. 569.

Intestinal Vascular Sclerosis. J. Felsen, New York.—p. 576.

*Multiple Primary Malignant Lesions. J. L. Tullis, New York.—p. 588.

Intravenous Use of Sucrose-Ringer's Solution to Produce Maximal Diuresis. H. F. Helmholz and J. L. Bollman, Rochester, Minn. —p. 606.

Variations of Serum Magnesium in 52 Normal and 440 Pathologic Patients. V. G. Haury and A. Cantarow, Philadelphia.—p. 616.

Absorption of Stilbestrol and Theelin from Cysts of Sesame and Peanut Oils. F. E. Emery, C. S. Matthews and E. L. Schwabe, Buffalo. —p. 622.

Histaminase: Further Laboratory Studies. M. Vaisberg, Baldwin, N. Y.—p. 628.

*Id.: Results of Treatment by Intramuscular Injection. M. Vaisberg, Baldwin, N. Y.—p. 635.

Regional and Seasonal Variations in Serum Cholinesterase of Human Beings and Dogs. R. W. Lackey and D. Slaughter, Dallas, Texas. —p. 640.

Values for Acetylcholine Esterase in Blood Serum of Normal Persons and Patients with Various Diseases. H. R. Butt, M. W. Comfort, T. J. Dry and A. E. Osterberg, Rochester, Minn.—p. 649.

Multiple Primary Malignant Lesions.—Tullis reports 21 instances of multiple primary malignant lesions encountered at necropsy in 1,044 consecutive cases in which a malignant lesion was present. Each lesion possessed generally recognized malignant characteristics; the microscopic pattern of each was a distinct entity, metastasis having been ruled out as far as possible. Three of the forty-four lesions noted were sarcomas and forty-one were carcinomas. Twenty lesions involved the gastrointestinal system, two the skin, five the liver, four the prostate, three the pancreas, three the lung, two the uterus and two the kidney. Metastasis from at least one of the lesions was present in 14 cases and metastasis from both lesions in 3. No metastasis could be found in 7. Seventeen of the patients were men and 4 were women, with an average age of 58.4 years. The average age is slightly above that for patients with single malignant lesions; this lends credence to the opinion that the malignant tumor that appears late in life is less rapidly lethal than the one that appears early and that, being less rapidly lethal, such a tumor does not cause death before a second lesion develops.

Histaminase by Intramuscular Injection.—Vaisberg gave intramuscular injections of histaminase to 19 allergic patients. The usual maximal dose was 10 cc. of histaminase solution prepared from fresh hog kidneys. At first the injections were given twice a week and later, if improvement ensued, once a week. All the patients were first tested to eliminate sensitivity to pork. As a tentative conclusion the author points out that the histaminase therapy may prove of value for resistant serum sickness, idiopathic pruritus and heat and cold allergy. It may be of limited value for neurodermatitis. Its effect on simple asthma was unpredictable, and it had no effect on vasomotor rhinitis, dermatographia, migraine and chronic urticaria. It was not tried in hay fever. Various lines of evidence lead to the impression that something other than the enzyme in histaminase is responsible for the improvement. Much more clinical work must be done with a potent, highly purified histaminase before any therapeutic claims for histaminase alone can be established.

Journal of Nervous and Mental Disease, New York

95:133-264 (Feb.) 1942

Psychoneurosis in Hospital for Mental Disease: Statistical Study of 100 Men and 100 Women. C. B. Farr and Genevieve M. Stewart, Philadelphia.—p. 133.

Ceramine Treatment of "Reversible" Psychoses: Preliminary Report. B. Skorodin, Peoria, Ill.—p. 146.

*Sleep Paralysis. B. W. Lichtenstein and A. H. Rosenblum, Chicago. —p. 153.

*Vitamin B and E Therapy in Tabes Dorsalis: Preliminary Report on Use of Wheat Germ Oil, Vitamin B Complex and Intraspinal Administration of Thiamine Chloride. S. Stone, Manchester, N. H.—p. 156.

Intradural Hematoma with Ipsilateral Hemiplegia and Ipsilateral Third Nerve Palsy: Case. I. C. Sherman and S. Krumholz, Chicago. —p. 176.

*Sensory Disturbances Following Insulin Treatment of Psychoses. K. Stern, T. E. Dancey and F. L. McNaughton, Montreal, Canada. —p. 183.

Analysis of Disappointing Results with Metrazol in Treatment of Certain Depressions. C. W. Osgood, Wauwatosa, Wis.—p. 192.

Sleep Paralysis.—Lichtenstein and Rosenblum report a case in which sleep paralysis occurred in the first period of sleep, with the patient completely paralyzed and unable to speak or move. Respiration was apparently unimpaired and continued as in sleep. The paralysis was described by Pavlov as a manifestation of localized sleep, with the motor centers "asleep" and "consciousness" awake. Sleep paralysis is frequently associated with narcolepsy, and attempts by some patients to ward off an attack precipitate an attack of helplessness. However, sleep paralysis accompanying natural sleep is a benign condition, probably resulting from a dissociation of the components of sleep. It should be differentiated from familial periodic paralysis. The patient should be assured that although the disorder is alarming it is always of short duration and does not result in permanent paralysis or any other disease. Usually just a slight touch suffices to dispel sleep paralysis.

Vitamins B and E in Tabes Dorsalis.—Stone used vitamins B and E in the treatment of 18 patients with tabes dorsalis who had previously received intensive arsenical and heavy metal therapy without arrest of the progress of the disease. Seventeen of the patients were given thiamine hydrochloride intraspinally in addition to oral therapy with both vitamins. Six patients received artificial fever therapy also during the intraspinal and oral therapy, and their improvement was most definite. The patient who received no intraspinal therapy had had ten inductothermy treatments one year previously, two years of concentrated arsenical and bismuth injections and oral vitamin B complex therapy. No improvement occurred until vitamin E was administered simultaneously with the vitamin B complex. The rate of gain was less spectacular than that of patients given

intraspinal treatment also, but the improvement was definite after six weeks of treatment. Three patients with paraplegia showed some temporary improvement only while receiving intraspinal medication. The diplopia of a patient did not disappear after fever treatment and chemotherapy but was relieved by the first intraspinal injection of thiamine hydrochloride. His gait and disturbances of the bladder showed most improvement after he was given oral vitamin E and B therapy. Gastric crisis was not relieved when intraspinal medication was given during a crisis. Intraspinal and oral medication abolished gastric crisis of 1 patient for nearly a year; this patient returned to remunerative work. The intraspinal and oral treatment reduced but did not abolish the frequency of gastric crisis, and lightning pains were improved but did not disappear. Pupillary changes remained fixed, and abolished tendon reflexes did not return after treatment. The sense of vibration reappeared in several patients, and various paresthesias have either disappeared or have become a source of little discomfort.

Sensory Disturbances Following Insulin Therapy.—According to Stern and his co-workers, a disturbance of the senses of taste, touch and smell were observed in 10 of 103 patients in the course of and for some months after insulin shock therapy. When sensory disturbances were observed the patients were given brewers' yeast, but it is difficult to determine whether recovery was due to this therapy, as in 1 patient transient numbness and paresthesia were relieved by the administration of carbohydrate as soon as the patient awoke. A possible vascular cause for the disturbances, particularly those of the extremities, must be considered. The problem seems to be similar to that of the damage to the central nervous system following hypoglycemia. Until more is known about the actual mechanism of sensory changes, insulin shock therapy should be supplemented by large doses of the vitamin B complex, which should be continued after the insulin course is completed.

Medical Annals of District of Columbia, Washington

11:1-40 (Jan.) 1942

Practical Treatment of Common Neuroses. J. C. Yaskin, Philadelphia.—p. 1.
Use of Blood Substitutes by Armed Forces. L. R. Newhouser and D. B. Kendrick, Washington—p. 12.
Surgery in the Office. C. S. White, Washington.—p. 16.
Chronic Constrictive Pericarditis: Successfully Treated Surgically. W. M. Yater and W. D. Claudy, Washington.—p. 19.

Michigan State Medical Society Journal, Muskegon

41:85-172 (Feb.) 1942

Vesicular and Vesiculopustular Eruptions of Hands and Feet: Diagnosis and Treatment. S. W. Becker, Chicago.—p. 111.
Symptoms and Therapy of Autonomic Dystonia. G. W. Slagle, Battle Creek.—p. 119.
Mental Disorders as Cause of Rejection in Michigan Registrants: Study of 340 Cases. H. A. Furlong, Myra E. Hilpert and C. H. Greve, Ann Arbor.—p. 123.
De Officii in Anesthesia. W. Bourne, Montreal, Canada.—p. 129.
Observations on Use of Glasses. A. Cowan, Philadelphia.—p. 134.

Minnesota Medicine, St. Paul

25:81-160 (Feb.) 1942

Present Status of Surgery of Accessory Nasal Sinuses. C. E. Connor, St. Paul.—p. 97.
*Minnesota's Experience with Human Encephalitis Caused by Equine Type of Virus in 1938. C. M. Eklund and A. Blumstein, Minneapolis.—p. 103.
Metastatic Brain Abscesses. G. N. Ruhberg, St. Paul.—p. 108.
Advantages and Limitations of Certain Practical Adjuncts in Diagnosis of Diseases of Heart. F. A. Willius, Rochester.—p. 113.
Results of Lowman Operation for Paralysis of Abdominal Muscles. G. A. Williamson, J. H. Moe, St. Paul, and W. C. Basom, Rochester.—p. 117.
Diagnosis of Activity of Pulmonary Tuberculosis. R. Davies, Nopeming.—p. 120.

Encephalitis.—Eklund and Blumstein discuss the extensive epizootic of equine encephalomyelitis that occurred in Minnesota in 1938; 23,686 horses were reported as affected, and 47 cases of encephalitis in human beings were reported to the Minnesota Department of Health. The onset in 36 cases took place between August 13 and September 20. The serum of 21 patients was tested for neutralization of the western virus. Fourteen of the specimens neutralized the virus, two neutralized the St. Louis virus and one showed moderate protection after standing in the ice box for two years. The distribution of patients whose serum neutralized the western virus was predominantly rural. The ages of these 14 patients varied from 1 month to 66 years. The typical onset was sudden, with headache and fever, and drowsiness appeared in a day or two. In the mildly affected patient no further symptoms appeared. In the more severely affected, drowsiness progressed to stupor, at times alternating with considerable restlessness. The sensorium became cloudy and there was disorientation in all fields. In about a week the temperature usually began to drop, and a few days later the patient's condition began to improve. A stiff neck and, less frequently, tremors were practically the only physical signs. The acute phase of the illness lasted two to three weeks. Most of the patients had complete amnesia for the period of their severe illness. Examination of the spinal fluid revealed an increase of cells; the counts ranged from 30 to 400 cells. Seven of nine differential counts showed a predominance of lymphocytes and two a predominance of polymorphonuclear cells.

New England Journal of Medicine, Boston

226:251-290 (Feb. 12) 1942

Diagnosis of Coronary Artery Disease. H. M. Marvin, New Haven, Conn.—p. 251.
Abdominoscrotal Hydrocele: Review of Literature and Report of Case. G. C. Prather, Boston.—p. 255.
*Use of Dilantin Sodium in Bronchial Asthma: Preliminary Report. M. H. Shulman, Salem, Mass.—p. 260.
Toxic Reactions Following Sulfonamide Treatment. C. S. Keefer, Boston.—p. 266.

226:291-322 (Feb. 19) 1942

Recurrent Pyelonephritis During Pregnancy. G. C. Prather and W. Sewall, Boston.—p. 291.
Perineal Phlegmon. S. R. Muellner, Boston.—p. 298.
Psychiatry: Neuroses in War. V. P. Williams, Boston.—p. 302.

Bronchial Asthma.—Shulman used phenytoin for the treatment of bronchial asthma in 7 children from 3 to 14 years of age. The patients had repeated, frequent, acute attacks of asthma and a constantly "wheezy" respiration; that is, intractable asthma that had not responded to the accepted routine treatment. Each patient was first given 0.03 Gm. of the drug morning and night. If after one week of therapy with this dose symptoms still persisted, the patient was given 0.03 Gm. of the drug three times a day. The dose was increased by 0.03 Gm. daily at intervals of one week until there were no attacks of asthma and no wheezing on moderate exertion. From 0.1 to 0.2 Gm. of phenytoin usually kept the patient free from symptoms. After an adequate dose was arrived at 6 patients remained consistently free from attacks of bronchial asthma. The children were able to engage in normal athletic and social activities. Lack of parental cooperation and understanding was an important factor in the case in which benefit was not complete. There was a distinct change in the personality of 3 children; they became less irritable, their mentality improved and they were much easier to live with. A stubborn eczema of 2 children, which had persisted since infancy, cleared to a remarkable degree while the patients were being treated with phenytoin.

Northwest Medicine, Seattle

41:39-76 (Feb.) 1942

Treatment of Patient with Irritable Colon. H. J. Tumen, Philadelphia.—p. 42.
Diagnosis and Treatment of Intestinal Obstruction, with Special Reference to Miller-Abbott Tube. D. Metheny and H. V. Hartzell, Seattle.—p. 49.
*Amebiasis in Yakima Valley. P. J. Lewis and J. H. Low, Yakima, Wash.—p. 52.
Venereal Lesions of Vulva: Differential Diagnosis. A. F. Lee, Seattle.—p. 57.
Fibroma of Tunica Vaginalis Testis. W. G. Schulte, Salt Lake City.—p. 60.
Difficulties Encountered in Appendectomy. J. A. Duncan, Seattle.—p. 63.
Vitamin B_1 in Heart Disease: Cases of Adult and Child Resembling Acute Rheumatic Fever. O. J. Morehead, Ritzville, Wash.—p. 65.

Amebiasis.—Lewis and Low state that the microscopic examination over a period of five years of five hundred and eighty-six wet and stained smears of stools disclosed amebas in one hundred and twenty-six, an incidence of 21.5 per cent.

Endameba histolytica accounted for 57.14 per cent and Endameba coli for 26.19 per cent of the infected stools. The following factors probably explain the high incidence of amebiasis in and about the Yakima Valley: 1. The urban water supply of Yakima is purified by the chlorination sedimentation method, which is known to be ineffective against amebic cystic contamination. 2. Most of the rural water supply is derived from cisterns filled at intervals with irrigation water. 3. The unusually large number of orientals inhabiting the Yakima Valley, among whom the incidence of amebiasis is notoriously high, particularly in "carrier" form, is a contributing factor. The most common abdominal symptoms in the locale are flatulence and abdominal discomfort, and the most common constitutional symptoms are fatigue and nervousness. Suitable and varied treatments result in apparent cure in 90 per cent of cases.

Pennsylvania Medical Journal, Harrisburg

45:417-544 (Feb.) 1942

*Ruptured Uterus At or Near Term: Report of 105 Cases. J. H. Dugger, Philadelphia.—p. 437.

*Chemotherapy in Upper Respiratory Tract Infections. F. W. Davison, Danville.—p. 443.

Roentgen Irradiation in Treatment of Inflammations. E. P. Pendergrass and P. J. Hodes, Philadelphia.—p. 447.

Colic in Babies. J. M. Higgins, Sayre.—p. 455.

Diagnosis and Treatment of Seborrheic Dermatitis. F. Amshel, Pittsburgh.—p. 457.

*Liver Toxicity in Anesthesia: Its Surgical Importance. L. M. Morrison and W. A. Swalm, Philadelphia.—p. 460.

Report on 10,000 Pentothal Sodium Anesthetics. G. J. Thomas, Pittsburgh.—p. 467.

Fractures of Skull and Associated Brain Injuries. D. P. Walker, Bethlehem.—p. 473.

Significance of Calcification in Gallbladder. S. P. Perry and J. W. J. Carpender, Sayre.—p. 477.

Clinical Study of Therapeutics of Pneumonias of Infancy and Childhood, with Special Reference to Chemotherapy. H. A. Agerty, Merion Station.—p. 482.

Ruptured Uterus.—Dugger analyzes the 105 cases of rupture of the uterus encountered among 318,103 live births and stillbirths in the county of Philadelphia during the last decade, an incidence of 1 ruptured uterus in 3,029 births. Only 1 of the 16 primigravidas recovered. All patients who had had seven or more pregnancies died. Most recoveries, 34 of 59, occurred among mothers who had had one to three previous pregnancies. There were only 6 other recoveries. The pregnancy terminated at or after the thirty-sixth week in 85 cases, and rupture occurred in 12 between the thirty-first and the thirty-fifth week, in 6 between the twenty-sixth and the thirtieth week and in 2 between the twenty-first and the twenty-fifth week. Fifty-six, or 86.1 per cent, of the deaths followed operative delivery. Internal podalic version was most frequently associated with rupture of the uterus. Fifty-five, or 84.6 per cent, of the deaths were preventable through improvement in the technical skill and judgment of the obstetrician, prompt and competent consultation in the presence of abnormal conditions, the termination of some vaginal or abdominal deliveries when rupture threatened, immediate laparotomy with hysterectomy or repair of a rupture when it had occurred (as the risk from infection is probably less than the danger from shock and hemorrhage) and the prompt and appropriate treatment of shock and hemorrhage.

Chemotherapy in Infections of Upper Respiratory Tract.—From the results of the treatment of 50 patients with severe infection of the upper respiratory tract by the usual method and of 50 others who in addition were given one of the sulfonamide drugs, Davison concludes that: 1. The sulfonamide drugs are of value in severe acute sinusitis, tonsillitis, nonsuppurative cervical lymphadenitis and cellulitis of the neck. 2. To obtain maximal benefit the drug must be used in the first forty-eight hours of the disease and in an adequate dose. 3. The sulfonamide drugs should not be used for the treatment of ambulatory patients. 4. Frequent blood counts and urinalyses must be done. 5. Treatment with the sulfonamide drugs does not take the place of transfusion in streptococcic infections or of surgical drainage when tissue necrosis or suppuration is present.

Liver Toxicity in Anesthesia.—Morrison and Swalm present a quantitative study of the postoperative hepatic function of patients after nine types of anesthesia. 1. The function of a normal liver under spinal anesthesia showed the least impairment and the most rapid return toward normal. The concentration of bile salt was depressed to only 760 mg. on the first day, and by the seventh day it reached the minimal normal concentration, 1,500 mg. 2. Spinal anesthesia produced, in the presence of a pathologic condition of the liver, an average concentration of 480 mg. of bile salt. Seventeen days later the average maximal concentration, 730 mg., was reached. 3. Combined ether anesthesia in the presence of a normal liver produced an average concentration of 520 mg. on the first postoperative day, and in seven days the normal minimum, 1,500 mg., was reached. 4. In patients given combined ether anesthesia in the presence of a pathologic condition of the liver the average concentration was 250 mg. on the first postoperative day, and only in eleven days did the level of bile salt reach that of the patients given spinal anesthesia. 5. Patients with a normal liver who were given evipal intravenously and underwent minor surgical procedures showed normal hepatic function immediately after the anesthesia as well as subsequently. 6. The hepatic function of patients with a normal liver who were given avertin with amylene hydrate rectally was definitely abnormal or depressed on the first and third postoperative days. 7. The hepatic function of patients with a normal liver who were given cyclopropane was not affected. 8. The postoperative hepatic function of patients with a normal liver who were given nitrous oxide anesthesia was normal on the first and subsequent postoperative days. 9. On the first and subsequent postoperative days the hepatic function of patients with a normal liver who were given spinal anesthesia was normal, as measured by the concentration of bile salt in the urine. Further study revealed that chloroform anesthesia as used for obstetric delivery is definitely toxic to the liver and can cause toxic hepatitis or subacute hepatic necrosis. The anesthetic should be used with utmost caution for obstetric delivery because of the slight impairment in hepatic function that occurs during pregnancy.

South Carolina Medical Assn. Journal, Florence

38:31-56 (Feb.) 1942

Cystinuria—Cystine Calculi. J. J. Ravenel and J. C. Aull, Charleston.—p. 31.

Observations of Certain Plastic Surgical Procedures. G. T. McCutchen, Columbia.—p. 35.

George Washington's Health Record. B. S. Harwood, Camp Creft.—p. 39.

Southern Surgeon, Atlanta, Ga.

11:79-152 (Feb.) 1942

Kentucky's Early Lithotomists. M. J. Henry, Louisville, Ky.—p. 79.

*Treatment of Retained Testicle. C. Rieser, Atlanta, Ga.—p. 90.

Sulfanilamide in Treatment of Peritonitis. M. B. Davis, Nashille, Tenn.—p. 99.

Fractures of Bones in Hand and Foot. W. M. Hayes, Hamilton, Ohio.—p. 105.

Intestinal Stenosis in Infants. J. D. Hancock, Louisville, Ky.—p. 113.

Indications for Surgery in Diseases of Thyroid. M. Thompson, Louisville, Ky.—p. 118.

Treatment of Recurrent Multilocular Cyst of Pancreas: Case Report. F. K. Boland Jr., Atlanta, Ga.—p. 126.

Sclerosing Osteomyelitis of Garre. W. M. Ewing, Louisville, Ky.—p. 132.

Treatment of Varicose Veins of Lower Extremities. E. Duncan, Louisville, Ky.—p. 134.

Acute Perforated Diverticulitis of Sigmoid: Case Report. R. L. Sanders Memphis, Tenn.—p. 139.

Retained Testis.—Rieser cites a case of bilateral intra-abdominal testes in a boy of 17 and states that the case illustrates that intra-abdominal testes rarely descend spontaneously. Even at 17 the physiologic and psychologic improvement that the boy experienced as a result of surgical intervention proved that the operation was warranted. Glandular therapy, the author concludes, before the age of puberty is questionable, and at puberty it is unnecessary. It has no harmful effect on the normally situated testis but a definite degenerative effect on the retained testis, and it may produce harmful constitutional changes. For cryptorchism associated with the Froehlich syndrome glandular therapy is indicated before puberty.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

64:197-304 (Dec.) 1941

Phantom Limbs and Body Shape. G. Riddoch.—p. 197.
Cerebral Electrical Changes in Experimental Concussion. D. Williams and D. Denny-Brown.—p. 223.
Component Reflexes of Micturition in Cat: Part III. F. J. F. Barrington.—p. 239.
Visual Disorientation, with Special Reference to Lesions of Right Cerebral Hemisphere. W. R. Brain.—p. 244.
Akinetic Mutism with Epidermoid Cyst of Third Ventricle, with Report on Associated Disturbance of Brain Potentials. H. Cairns, R. C. Oldfield, J. B. Pennybacker and D. Whitteridge.—p. 273.
Note on Clinical Anatomy of Veins, with Special Reference to Spinal Veins. H. A. Harris.—p. 291.

British Journal of Ophthalmology, London

26:45-92 (Feb.) 1942

Education of an Ophthalmic Surgeon. A. Loewenstein.—p. 45.
Glass in Anterior Chamber. T. C. Summers and H. Hobbs.—p. 54.
Etiology of Obscure Case of Retrobulbar Neuritis. Rosa Ford.—p. 56.
Tonic Pupil Syndrome. P. W. Leathart.—p. 60.
Significance of Lesion of Optic Nerve. G. J. Dixon.—p. 64.

British Medical Journal, London

2:99-136 (Jan. 24) 1942

Effect of Hemorrhage on Red Cell Size and Red Cell Distribution. G. L. Brown, J. A. R. Miles, Janet M. Vaughan and L. E. H. Whitby.—p. 99.
Treatment of Rheumatoid Arthritis in Children. D. Roden.—p. 102.
Observations on Breech Delivery. L. G. Higgins.—p. 105.
*Diagnosis of "Back Pressure" Kidneys in Cases of Enlarged Prostate. A. F. Kraus.—p. 109.

Renal "Back Pressure" and the Enlarged Prostate.—On the basis of examining approximately 500 cases of enlarged prostate by intravenous urography, Kraus concludes that prostatectomy to be successful must restore the normal evacuation of the urinary bladder, decompress renal back pressure and cause the normal tonus and peristalsis of the renal pelvis and the ureter to reappear. The patient suffering from an enlarged prostate which has led to renal damage can be considered as "cured" only if transurethral resection or some other procedure has achieved this. If postoperative intravenous urography of patients considered cured by transurethral resection reveals that satisfactory decompression of renal back pressure has not taken place, sooner or later suprapubic or perineal prostatectomy will lead in the radical surgical treatment of the enlarged adenomatous prostate. If it can be proved that hemiprostatectomy decompresses the kidney (when only one kidney is damaged) on the side of the adenoma, this conservative method will be preferable to radical procedures. The surgeon who performs a two stage suprapubic prostatectomy runs fewer risks than the operator who trusts functional tests which do not reveal dormant urinary infection and/or a grossly impaired ureteral peristalsis. These two factors can be evaluated only by intravenous urography, and that is why prostatectomy still seems a too hazardous operation. With intravenous urography renal back pressure can be diagnosed and too early prostatectomy excluded. With the aid of intravenous urography it is possible to recognize that the enlarged prostate is not only an obstacle to micturition but also an obstacle to normal ureteral peristalsis and tonus.

Journal of Neurology and Psychiatry, London

4:163-296 (July-Oct.) 1941

Sulfanilamide and Sulfapyridine in Experimental Cerebral Wounds. E. H. Botterell, E. A. Carmichael and W. V. Cone.—p. 163.
Congenital Form of Amaurotic Family Idiocy. R. M. Norman and N. Wood.—p. 175.
Impereception for Position of Eyelids on One Side. L. H. Rubinstein.—p. 191.
Local Extension of Nerve Fibers into Denervated Areas of Skin. G. Weddell, L. Guttmann and E. Guttmann.—p. 206.
Potassium and Muscular Disorders. J. N. Cumings.—p. 226.
Effect of Prostigmine on Urinary Excretion of Potassium in Normal Subject. J. N. Cumings.—p. 235.
Traumatic Subdural Effusions. A. A. McConnell.—p. 237.
Significance of Abnormal Electroencephalogram. D. Williams.—p. 257.

Lancet, London

1:95-128 (Jan. 24) 1942

Experimental Wounds Treated with Cod Liver Oil and Related Substances. L. Dann, A. Glücksmann and Katharine Tansley.—p. 95.
Dental Fluorosis and Caries in London Children. Margaret M. Murray and Dagmar C. Wilson.—p. 98.
Recurrent Neutrophil Agranulocytosis. B. E. Barsby and H. G. Close.—p. 99.
Percentiles for Intelligence Quotients. P. Slater.—p. 101.
Glandular Fever with Jaundice. A. B. Carter.—p. 102.
Id. S. Gold.—p. 103.
*Relapsing Fever. H. S. Stannus and M. Bendit.—p. 103.
Paratyphoid Fever: Case Treated with Sulfapyridine. F. Muller.—p. 104.
Urinary Calcium in Nutrition Surveys: Sulkowitch Test. G. C. Linder and J. M. Latsky.—p. 105.
Crush Fractures of Os Calcis. C. H. Gray.—p. 106.

Relapsing Fever.—As war, famine and epidemic diseases are bound together and relapsing fever (mothered by the louse) is a common scourge, Stannus and Bendit report its occurrence in a Belgian aviator who was admitted to the French Hospital on July 30, 1941 with a temperature of 103 F. and a pulse rate of 84. He did not complain of any symptoms, and except for a dirty tongue and constipation abnormal physical signs were not present. The rise of temperature had been accompanied by shivering, and its fall to 98 F. the next day was associated with profuse sweating and exhaustion. The temperature was normal four days later, remained so for a week and then began to rise. On the basis of a history of a previous febrile attack on July 13 which lasted for five days a diagnosis of relapsing fever was made and confirmed by examination of a blood film. No treatment was given. The patient's history revealed that he was shot down at the time of the Belgian collapse, escaped to France, entered Spain in an attempt to reach Portugal, was imprisoned in Spain from Oct. 26 to Nov. 10, 1940, then sent to a concentration camp from which he escaped on Feb. 7, 1941, made his way back to unoccupied France, remained there until June 15, when he crossed to Spain, evading capture, and reached Lisbon on July 13, when he had his first attack of fever. During his wanderings and imprisonment he had suffered great privation. All the inmates of the prison were lousy. The patient does not recall being bitten by ticks. The incubation period of relapsing fever is commonly six to ten days but may be much shorter or longer. It is therefore probable that he was infected in Spain. The lack of severe symptoms is characteristic of the disease encountered in Spain, which is transmitted by ticks (Ornithodorus marocanus and exoticus). It seems possible that the case is one of endemic relapsing fever, with the tick as the vector, rather than one of the epidemic type carried by the louse.

Medical Journal of Australia, Sydney

1:33-62 (Jan. 10) 1942

Galactose Tolerance Test in Thyrotoxicosis. T. E. Wilson.—p. 33.
*Arterial Hypertension: Symptom of Intracranial Tumors. F. Morgan and A. Schuller.—p. 44.
Eye Diseases Found in Tasmania: Eight Year Survey. J. B. Hamilton.—p. 45.

1:63-94 (Jan. 17) 1942

Attempted Suicide. J. McGeorge.—p. 67.
Dangers of National Salaried Medical Service. A. E. Brown.—p. 74.
Simple Safeguard in Feeding of Premature Infants. Kate Campbell.—p. 76.

1:95-124 (Jan. 24) 1942

Sciatica: Its Causes and Treatment. A. Juett.—p. 95.
Fractures of Radius and Ulna. H. A. Sweetapple.—p. 97.
Treatment of Gas Gangrene. W. H. Smith.—p. 100.
"Driving Under the Influence." R. Ashburner.—p. 102.
Id. R. Lucas.—p. 103.
Id. J. McGeorge.—p. 105.

Arterial Hypertension.—Morgan and Schuller present 2 cases which illustrate that cerebral tumors may be associated with a high arterial hypertension. The lesion of 1 of the patients, a man of 43, was a meningioma in the posterior fossa and of the other 1, a boy of 19, an astrocytoma in the supratentorial space. The blood pressure of the 2 patients returned to normal after the tumors were resected completely.

Arch. Urug. de Med., Cir. y Especialid., Montevideo

19:357-476 (Oct.) 1941. **Partial Index**

Peripheral Circulatory Insufficiency: Collapse or Shock. B. Moia. —p. 357.
Placenta as Inhibiting Factor of Version by External Maneuvers. A. Turenne.—p. 394.
*Brucellosis and Tuberculosis. P. Purriel, A. A. Piaggio and R. Risso. —p. 401.
Kymographic Oscillations in Insufflation of Uterine Tubes. A. Stabile. —p. 406.
Results of Investigations on Digestive Allergy in Gastroenterologic Practice. B. Varela Fuentes and P. Recarte.—p. 416.

Brucellosis and Tuberculosis.—According to Purriel and his collaborators a considerable literature exists on brucellosis and tuberculosis. It has been pointed out that brucellosis may be mistaken for tuberculosis, that the two concur and that the tissular and humoral reactions caused by them are similar. Brucellosis can take on the aspects of tuberculosis and simulate miliary tuberculosis, meningitis and various types of extrapulmonary tuberculosis. Some observers insisted that the endocrinologic state of patients with brucellosis favors the appearance or exacerbation of tuberculosis: "Brucellosis makes the bed for tuberculosis." The authors investigated the index of tuberculous infection in workers of meat packing plants, in whom infection with Brucella bovis had been detected by means of the intradermal reaction of Burnet, the tuberculous morbidity in workers infected with brucellosis and the tuberculous morbidity in workers who had had brucellosis. They concluded that the index of tuberculous infection is only slightly higher in workers infected with Brucella bovis than in the other workers of the meat packing plants. The tuberculous morbidity in the brucella infected employees was lower than that in the employees without brucella infection. The tuberculous morbidity in workers who had had brucellosis was not greater than that in the other employees. In a case in which tuberculosis and brucellosis coexisted, brucellosis was completely cured and there was no aggravation of tuberculosis. The authors disagree with the postulates that "brucellosis makes the bed for tuberculosis" or that tuberculosis is always aggravated in persons in whom brucellosis develops.

Medicina, Buenos Aires

2:117-254 (Jan.) 1942. **Partial Index**

*Pulmonary Lesions of Malignant Lymphogranulomatosis. M. R. Castex, A. Pavlovsky and J. Valotta.—p. 117.
Inactivation of Estrogenic Substances in Organism. E. Fels.—p. 140.
Pulmonary Atelectasis Caused by Aspiration of Residual Air. A. Bence and A. Lanari.—p. 152.
*Action of Bile on Acceleration of Jejunoileac Passage. R. Q. Pasqualini and A. J. Burlando.—p. 174.

Pulmonary Lesions in Malignant Lymphogranulomatosis.—Castex and his collaborators report observations on 340 cases of malignant lymphogranulomatosis (Hodgkin's disease). A large number of the patients were under observation for only a short time, 74 were followed up during the whole course and 73 are undergoing treatment at present. In only 16 cases was invasion of the lung demonstrated in the roentgenogram. The pulmonary lesion was visualized from the beginning in only 3 of the cases.

Action of Desiccated Hog Bile on Accelerated Jejunoileac Passage of Food.—Pasqualini and Burlando analyzed manifestations of accelerated jejunoileac passage in 100 cases. The general symptoms were emaciation, asthenia, fatigability, insomnia, mild fever, nervousness and mental depression. Digestive symptoms were manifested by anorexia, epigastric pain, eructations, heartburn, hyperchlorhydria, nausea, vomiting, periumbilical pain, meteorism, constipation or diarrhea. Vasomotor or neurovegetative symptoms were facial flushing, sweating, despondency, palpitations, dizziness and headaches. Examination of the feces disclosed lipolytic, amylolytic and proteolytic insufficiency and the presence of abundant cellulose. Blood analysis revealed macrocytic anemia. Paresthesias and anesthetic zones were noted in the extremities. In all cases the jejunoileac passage of food was much accelerated. Administration of desiccated bile to healthy persons caused a moderate retardation of the normal passage of the jejunoileac contents. In patients with accelerated passage the desiccated bile effected a considerable slowing of the jejunoileac passage of food, so that the roentgenograms showed a normal behavior of the intestinal contents. Continued administration of bile to patients with accelerated jejunoileac passage counteracted the clinical manifestations.

Memórias do Instituto Butantan, São Paulo

15:1-432 1941. **Partial Index**

*Observations on Antidiphtheritic Immunity. J. P. do Amaral.—p. 383.

Antidiphtheritic Immunity.—Do Amaral administered diphtheria anatoxin to 517 children from 6 to 14 years of age. The anatoxin was administered subcutaneously in doses of 0.5, 1 and 1.5 cc. at intervals of fifteen days. Four children exhibited a general and local reaction of general malaise, fever for twenty-four or forty-eight hours and local inflammation. In these cases the single injection which causes a general and a local reaction produces protection of the same degree as that which is obtained by the total treatment of three injections as given to nonhypersensitive children. The natural and acquired immunity was verified in 98 children and 55 children, respectively, by means of Kellogg's biologic test, performed before and three months after the injections. Natural immunity was found in 18 of 98 children. The specific anatoxin contents three months after vaccination were of high titers in 55 tested children. The results showed acquired immunity of high degree in all cases. Diphtheria anatoxin is harmless and of great antigenic power.

Archiv für die gesamte Physiologie, Berlin

244:145-308 (Dec. 31) 1940. **Partial Index**

Reflex and Central Action of Carbon Dioxide on Respiration. K. Gollwitzer-Meier and E. Lerche.—p. 145.
Effect of Starvation and of Intestinal Contents on Dextrose Resorption of Small Intestine of Normal and Adrenalectomized Rats. N. Hamar. —p. 157.
Twenty-Four Hour Rhythm of Dextrose Resorption Capacity of Small Intestine. N. Hamar.—p. 164.
Methodics of Physiology of Stimulation and Technic of Registration with Aid of Electron Tubes and Cathode Ray Oscillographs. W. Holzer.—p. 205.
*Action of Thymus Hormone on Larvae of Cold Blooded Animals. C. Bomskov and G. Kückes.—p. 246.
Determination of Smallest Quantities of Acetylcholine in Pulmonary Specimen of Frog. M. Corsten.—p. 281.
Production of Diluting and Gliding Saliva by Exclusive Stimulation of Chorda Tympani as Example of Selective Stimulation of Sympathetic Nerves. H. Hellauer and M. Schneider.—p. 292.

Action of Thymus Hormone on Larvae of Cold Blooded Animals.—Bomskov and Kückes demonstrated that the diabetogenic hormone of the anterior pituitary is a thymotropic hormone which stimulates the production of a hormone in the thymus. This hormone is a lipoid substance. Bomskov and his collaborators isolated it and explained its action. Their observations indicate that the thymotropic hormone of the anterior pituitary is probably identical with the growth hormone. From this it was deduced that the growth action of the pituitary is effected by way of the thymus. Bomskov and Kückes were able to demonstrate on frogs that the specific thymus hormone is capable of eliciting the same manifestations which other investigators had obtained in the feeding of fresh thymus to the larvae of cold blooded animals. The weight and the longitudinal growth of the frogs increase, and there are changes in the external form, such as spherical shape of the trunk, widening of the caudal fin and extremely dark pigmentation. The most important characteristic of the animals treated with thymus hormone is a complete inhibition of subsequently administered thyroid. Whereas untreated control animals of the same spawn respond to the feeding of thyroid in the well known manner, tadpoles that have been treated with thymus hormone do not respond; neither shape, weight nor length of the animals is altered by the administration of thyroid. This antagonistic action of the thymus hormone on the thyroid is a corroboration of the results of experiments conducted by Bomskov and Spiegel, who ascertained that in the basal metabolism of warm blooded animals also the thymus hormone is the antagonist of the thyroid. The results obtained with the thymus hormone are compared with the literature on the effects of fresh thymus substance, and it is suggested that the thymus effects on the larvae of cold blooded animals are specific for the thymus hormone.

THE STUDENT SECTION

of the

Journal of the American Medical Association

Devoted to the Educational Interests and Welfare of Medical Students, Interns and Residents in Hospitals

SATURDAY, MAY 16, 1942

The Medical Student of Today

In America we are blessed by living in a country richly endowed, a nation producing 100 billion kilowatt hours of energy a year, or work equal to the human power of one-half billion men working eight hours a day. So never sell America short, no matter what happens in the rest of the world. What of the medical student? His greatest asset is health. Nothing can take its place. A smooth, efficient human machine is something devoutly to be wished and to guard. There are a method of living and a system of life which are conducive to that state. This demands systematic planning of work and recreation and exercise and diet and the avoidance of all factors which induce or favor disease. The modern student rarely learns to allocate these essentials in their proper places.

The next great asset is to become a master workman. Today we see fear abroad. There is only one thing that cannot be taken away from you and that is what you store up in your forebrains—the knowledge of your profession. No matter what the future, medicine is an essential commodity because it deals with the only real common denominator which determines the destinies of the world, and that is mankind itself.

These buildings are dedicated to the study of man. You are to be entrusted with the lives of men, women and children. Our business is to prepare you for that task. Some of the mistakes you will make in later life you can trace to your omissions in the classroom.

I have a few suggestions:

Have a plan. Where do you expect to go? Lay a course and stick to it now. In the first two years you should master the fundamentals; in the last two years you use those fundamentals. You must master them. How beautifully the pieces of the jigsaw puzzle fit together when the whole course is mastered. You will learn modern medicine. It was my privilege to have as teachers Widal, who discovered the Widal reaction, Laveran, who discovered the malarial parasite, Roux, one of the assistants of the immortal Pasteur, and a number of those great men who in the latter part of the last century welded some of the links to make the mighty thing called medicine today, but none of them possessed the weapons against disease that you will possess.

Begin now the student habit. Medicine is rich with adventure. The impenetrable jungle is giving up its secrets day by day. Some day the spark may jump from a book or a magazine or a teacher and ignite you, and then suddenly you realize that you too have some of those qualities which made other men great in their chosen fields.

You never know what you can do until you try. The great French neurologist Pierre Marie pointed out that none of us use the full capacity of our minds. He said that many of the cells were in a state of atrophy from disuse. Nearly every great man I have known has had some physical infirmity or some mental complex to overcome before he could bring his full faculties into play.

Medicine today is founded on all that has gone before. Chemistry has not hesitated to knock at the very principle of life itself. Physics has not hesitated to shatter the atom. The electron microscope and the spectroscope foreshadow new things. We cannot afford to remain static. He who charts his course and will not allow himself to be diverted and uses every energy to reach his goal will rarely fail. Energy, dissatisfaction with existing conditions, a ceaseless striving after perfection reward the toiler with more muscle, more strength to climb.

There are few successes without some failure and few failures without some successes. To one man failure spells the end of everything, to another it only serves to spur him on. Few

Abstract of address of Dr. Martin E. Rehfuss at the opening of the annual session of Jefferson Medical College, Philadelphia, Sept. 17, 1941 and published in the Journal of the Association of American Medical Colleges in March 1942.

jobs fail to respond to the ceaseless biting off piece by piece.

Finally a great school has first morale, then discipline and, last but not least, loyalty. Morale implies self respect and a healthy mind in a healthy body. Discipline implies respect to constituted authority and a consciousness of the purpose of our work; loitering in the hallways, putting your feet on the benches, talking when some one else is talking, residents who sit at the table when the Chief enters, nurses who are careless and noisy; patients who are unkempt, beds poorly made, wards littered with apparatus no longer needed, histories incoherent and illegible, all attest lack of discipline. In the absence of the Chief, the resident is literally the subchief and so responsible for discipline and order.

To paraphrase a British statesman in his finest hour, we shall fight disease wherever we find it by every means in our power, in the hills, in the country, in the homes. We shall learn all the methods of organized science to combat disease. We must never falter.

The Psychologic Examination

In medical school the student receives careful training in the technic of making a physical examination. Inspection, palpation, percussion and auscultation become almost second nature to him. He spends many hours in learning the methods of chemical examination as applied to the fluids of the body. But about the technic of the psychologic examination of the patient he is taught practically nothing. In medical practice he soon finds that it is often as necessary to make a psychologic examination as it is to make a physical examination, but because of his lack of training and his unfamiliarity with the technic of a formal procedure he can do so only haphazardly.

Many physicians do not even know that there is an established technic of psychologic examination, although it has been in use by psychiatrists for forty years under the misleading title of the "mental examination." Now that physicians in other fields of medicine are more generally aware of the necessity for psychologic examinations and the usefulness of a standard procedure, it seems appropriate to give the widest possible circulation to any scheme which has proved useful.

The psychologic examination used in psychiatry is based on the assumption that there are certain intellectual, emotional and behavior patterns characteristic of the individual which can be observed, recorded and compared with those of other persons, and the concurrencies and discrepancies indicated. Some of the reactions can be measured approximately, others of them quite accurately. The order in which data are collected and the details investigated in the exploration of the various fields of mental activity have varied in different psychiatric clinics. A scheme has been worked out over a period of twenty years at this clinic. The procedure has been changed many times; in fact, it is constantly being modified and, we hope, improved.

For the sake of completeness the entire procedure of examination and testing is given. These are only suggestions, and the examiner must use his judgment in modifying them for the individual patient. Although the outline should be followed rigorously in recording and organizing the data, it is rarely practicable to follow it systematically in obtaining them. It is generally best to begin by asking the patient to tell how he came to be there and from this go on to the life story, later filling in omissions in the family history, developmental history, school history and the vocational, sexual and religious history.

In actual practice the young psychiatrist in training carries through the entire investigation as outlined. The inexperienced examiner will need to take specific notes regarding his observations and the data supplied by the patient, but the experienced examiner may be able to record mentally sufficiently vivid and accurate impressions to enable him to dispense with note taking and rely on his memory when he later dictates the material.

The introduction to an outline of procedure for determination of the mental status of the psychiatric patient by Drs. William C. Menninger, Karl A. Menninger and Robert P. Knight, published in the Bulletin of the Menninger Clinic, July 1941.

DO YOU KNOW WHAT PHYSICIAN—

Was the first Surgeon General of the United States Navy and the fifth chief of the Bureau of Medicine and Surgery? *(The answer will be found on page 305.)*

Medical College News

Air Raid Precautions at Harvard

All the resident students at Harvard Medical School, Boston, have been assigned to posts at the school or at some nearby hospital in the plan of preparation against possible air raids. According to *Pulse*, March 9, which the New England Regional Committee of the Association of Internes and Medical Students just started publishing, the duties assigned to the Harvard students in this precautionary program range from that of roof watcher to first aid worker with regular drills scheduled. All third and fourth year medical students have already qualified as first aid instructors.

Student Finances and the Accelerated Course

Now that summer sessions in many schools will keep students from the usual summer gainful employment, the New England region of the Association of Internes and Medical Students sent questionnaires to medical students of Boston to learn how many would need financial help in order to continue their summer studies. Four hundred and twenty-one students of the freshman, sophomore and junior classes returned the questionnaires and of these 60 per cent said they would require on an average $360 more than they had to carry on. These students made on the average during the last summer vacation $320.

Yale's First Wartime Doctors

The majority of the fifty-one members of the graduating class at Yale University School of Medicine, New Haven, Conn., are already registered for military service and expect to be in active duty with the armed forces after completing the year of internship allowed by the Army and Navy. Yale's first wartime doctors have already received internship appointments to hospitals in fifteen states, Dean Francis G. Blake announced May 1. Yale University School of Medicine will embark on an accelerated year-round program, beginning June 29, when the entering class will be increased by 20 per cent to help meet the war emergency. At least sixty students will be admitted to the school in June instead of the customary fifty.

Indiana Cancels Postgraduate Courses

According to the Indianapolis *Star*, the Indiana University Medical School, Indianapolis, has canceled all but one of the postgraduate courses held each spring at the University Medical Center for the duration of the war. Dean Willis D. Gatch is reported to have said that, although hundreds of general practitioners have been attending these courses each spring, the committee in charge agreed that the demands being made on the profession as a result of the war situation make it unpractical to continue the courses at this time. The one postgraduate course which has not been canceled is the annual course for specialists in eye, ear, nose and throat diseases, which is attended annually by physicians from widely separated sections of the country.

Annual Undergraduate Day at Pennsylvania

The University of Pennsylvania School of Medicine, Philadelphia, held its annual Undergraduate Medical Association Day on April 9. The entire school day was given over to special addresses and student research reports. Among others, Dr. O. H. Perry Pepper spoke on the medical student and the war, Dr. Franklin C. McLean of the University of Chicago on "War Gases," and Dr. Carl J. Wiggers of Western Reserve University School of Medicine, Cleveland, on "Recent Developments in the Study of Shock."

More British Medical Students Study in the United States

Again the Rockefeller Foundation has offered twenty-five studentships to medical students in England to enable them to take part of their clinical courses in medical schools in the United States and Canada. While the object primarily is to help students in schools which have been bombed during the war, applications from all medical schools in England, Scotland, Wales and North Ireland may be made. The studentships are for two years or possibly a shorter period in special cases and, subject to satisfactory progress, cover all tuition fees, maintenance and so on but not the cost of travel to and from America. The students must return to their own country to take their final examination. The successful candidates for the twenty-five studentships will probably leave England in August, although applications were to have been in not later than April 25, accompanied by a full and confidential report by the dean, a medical certificate and a roentgenogram of the chest. Candidates must be willing to comply with certain conditions as regards vaccination.

According to the *British Medical Journal*, the medical schools at the following universities are prepared to take one or two of these students: California, Chicago, Cincinnati, Columbia, Cornell, Duke, Harvard, Illinois, Iowa, Johns Hopkins, McGill, New York, Pennsylvania, Rochester, Stanford, Toronto, Tulane, Vanderbilt, Washington, Western Reserve, Wisconsin and Yale.

An item concerning the first group of British medical students who came to the United States to study was published in the Student Section on Dec. 27, 1941, page 2288.

Winners of the Schering Award

The Association of Internes and Medical Students has announced the following winners of the 1941 Schering Award: Fred Feldman '42, Albany Medical College, and Cesare Lombroso Jr. '42, Johns Hopkins Medical School, have been awarded first and second prize, respectively; Elizabeth L. Brown '44, Albany Medical College, and Clarence Denton '44, Long Island College of Medicine, have been awarded third prize. The subject of the competition was "The History of Endocrine Research."

This award was established by the Schering Corporation and is conducted by the Association of Internes and Medical Students. It provides two tuition scholarships of a year and a half year, respectively, for the best papers on some aspect of endocrinology submitted by medical students in the United States or Canada. In this contest, papers were submitted by students representing twenty-four medical schools.

The committee of judges included Drs. Edward C. Hamblen, Duke University School of Medicine; Roy G. Hoskins, Memorial Foundation for Neuro-Endocrine Research, Harvard Medical School; Herbert M. Evans and Hans Lisser, University of California Medical School; Ernest P. McCullagh, the Cleveland Clinic; Emil Novak, University of Maryland School of Medicine and College of Physicians and Surgeons; Elmer L. Sevringhaus, University of Wisconsin Medical School;

Ephraim Shorr, Cornell University Medical College and the New York Hospital, and Fred C. Koch, Ph.D., and Carl R. Moore, Ph.D., University of Chicago.

Speed Instruction at Western Reserve

In conformity with the nationwide movement to speed medical instruction so as to prepare more physicians for the urgent needs created by the war, Western Reserve University School of Medicine, Cleveland, announced early in the year that it would eliminate the summer vacation and begin its next session on June 22 and then start new classes at intervals of about nine months for the duration of the emergency. An extensive study of the situation indicates that four continuous sessions of thirty-six weeks, arranged as semesters, appear necessary and sufficient to maintain the desirable standards. In the first, second and third years, these comprise thirty-two weeks of instruction, two examination weeks and a recess of two weeks at the end of the second semester. The fourth year consists of thirty-five weeks of clinical clerkships and a week for commencement. The entire course would thus be completed in one hundred and forty-four weeks. New classes according to this plan would begin on June 22, 1942, March 1, 1943, Nov. 8, 1943, July 17, 1944 and March 26, 1945. The entire program will be subject to change with developments. In view of the various programs of acceleration adopted by the undergraduate colleges, it is impossible to devise an integration of premedical and medical courses that would be universally applicable without any interruption. However, the elasticity of the electives in the undergraduate courses should make it possible to complete the subject requirements, if they are planned well in advance. The bachelor degree requirement may be waived during the emergency in the case of exceptional students who have completed at least three years of college work.

New Chapters of Sigma Xi

Three new chapters of the society of the Sigma Xi, national honorary society for the promotion of research in science, were installed during March. In the installation of a chapter on March 14 at Utah State Agricultural College at Logan, John G. Kirkwood, professor of chemistry at Cornell University, gave an address on "The Structure of Liquids."

At the Illinois Institute of Technology, Chicago, March 25, a chapter was installed with Ross A. Gortner of the University of Minnesota, president of Sigma Xi, and George A. Baitsell, Yale University, secretary of Sigma Xi, as the installing officers. The day was marked by a general assembly of students, inspection of laboratories and an installation dinner at which H. A. Bethe of Cornell University spoke on "Energy Production in Stars."

A Sigma Xi chapter was installed with appropriate ceremonies on March 24 at the Louisiana State University, Baton Rouge.

Louisiana University

Joseph T. Stansfield '42 was elected president of the Louisiana State University Society of Medical Sciences at the last meeting of the school year, May 7; Francis L. Ware '42, vice president, and George B. Payne '42, secretary-treasurer. The faculty adviser elected was Dr. Karl Dickens of the department of medicine. The chairman of the banquet that followed the meeting was the outgoing president of the society, Connie I. Hood Jr. '41. At a recent meeting, Louis Lazar was chosen the outstanding senior member of the organization; the textbook "Pharmacological Basis of Therapeutics," by Goodman and Gillman, was presented to him by the society at a banquet, February 4. At the meeting of the society, March 9, papers on "The Therapeutic Uses of the Vitamins" were presented by Philip Dann, Herbert Tucker, George Whitman and R. V. Martin. The discussion was opened by Dr. John LaDue of the department of medicine.——The society was addressed, March 16, by Mr. Francis LaTard on "History of Hernia Repair," followed by a motion picture on the surgical repair of hernia and a discussion by Dr. Hugh C. Ilgenfritz, the organization's faculty adviser. Gordon Peek was elected president of the student body of the Louisiana State University School of Medicine, New Orleans, for the present year.

Wayne to Build a Student Center

The board of education of Detroit on March 24 approved a competitive program for an architectural design and campus arrangement for the proposed extension of the Wayne University campus and for the selection of an architect for a student center building. A group of five persons, including three architects, will select the winning design. There will be cash awards totaling $4,000, and the winner of the student center building portion of the contest, who may or may not have been awarded one of the other prizes, will receive $2,275, which will be a payment on account of the total of 5 per cent which the person will receive after construction begins. The first block in the proposed expansion of the university campus is already under condemnation. The actual construction, however, of the student center building will await the termination of the war. Wayne University officials have had the expansion program under discussion for several years. This program is independent of the one being considered for the proposed Wayne University Medical Center.

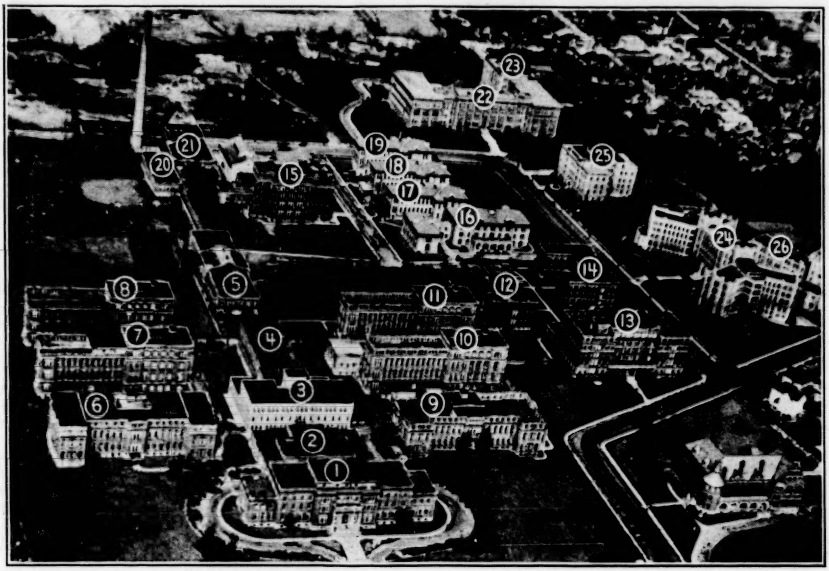
Harvard Awards Scholarships

Harvard Medical School, Boston, announced the award of scholarships and fellowships to the following medical students, April 9, totaling $6,100:

To Robert Paine, Memphis, Tenn., the David Williams Chever Scholarship. To Sheridan S. Evans, Iuka, Ill., the Charlotte Greene scholarship. To Lyndon R. Barnett, North Stratford, N. H.; Albert C. Biegel, Denver; Edward L. Burwell, Porterville, N. Y.; Harvey R. Butcher, Adrian, Mo.; John W. Harris, Allston, Mass.; Felix Heimberg, Dorchester, Mass.; Peter J. Koeniger, Woodhaven, N. Y.; Paul J. R. Schlessinger, Pawtucket, R. I.; Chandler A. Stetson Jr., Brunswick, Maine; Arthur W. Trott, Wollaston, Mass., and Edward P. Wallace, Newton Center, Mass., the George Haven Scholarships. To John E. VanderLaan, M.D., Muskegon, Mich., the Jeffrey Richardson Fellowship. To Walter E. Knox, McCook, Neb., the James Jackson Cabot fellowship. To John M. Weller, Ann Arbor, Mich., the George Cheyne Shattuck Memorial Fellowship. To Arthur C. Guyton, Oxford, Mass., the Charles Eliot Ware Memorial fellowship. To Israel H. Scheinberg, New York, the John Ware Memorial Fellowship. To Robert L. Berg, Spokane, Wash.; Avram S. Goldstein, New York; Irving M. London, Malden, Mass., and Roger W. Morrison, Pittsburgh, the DeLamar Student Research Fellowships.

Lecture at North Carolina

Dr. George W. McCoy, director of the department of preventive medicine and public health, Louisiana State University School of Medicine, New Orleans, during the week of February 16-20 lectured on leprosy and tularemia at the School of Public Health at Chapel Hill, N. C.



UNIVERSITY OF CINCINNATI HOSPITAL GROUP

(Numbers 1 to 21 Inclusive, Buildings of Cincinnati General Hospital)

1. Administration Building
2. Receiving Ward
3. Outpatient Dispensary of the College of Medicine
4. Operating Pavilion
5. Service Building and Dining Room
6. Surgical Specialties
7. Surgical Pavilion
8. Surgical Pavilion
9. Pediatrics Pavilion
10. Obstetrics and Internal Medicine Pavilion
11. Obstetrics and Internal Medicine Pavilion
12. Psychiatry Building
13. Nurses Home and Dormitory
14. Nurses Dormitory
15. Institute of Pathology
16, 17, 18, 19. Contagious Diseases Hospital
20. Dormitory
21. Power Plant and Laundry
22. College of Medicine Building
23. Kettering Laboratory of Applied Physiology of the College of Medicine
24. Children's Hospital
25. The Christian R. Holmes Hospital of the College of Medicine
26. Pediatric Research Foundation of the Children's Hospital

University of Cincinnati College of Medicine

Although its early history goes back to 1819 when the Medical College of Ohio was founded, the University of Cincinnati College of Medicine, as such, dates from 1917. The Medical College of Ohio united with the Miami Medical College in 1857. The schools separated in a few years but again united in 1909 under the name of the Ohio-Miami Medical College, and this school in 1917 became the University of Cincinnati College of Medicine.

The plant of the University of Cincinnati College of Medicine includes the college-hospital group of buildings, the Children's Hospital, the Chronic Disease Hospital and the Hamilton County Tuberculosis Hospital. The Children's Hospital is a complete unit for the practice and teaching of pediatrics; its medical director is the professor of pediatrics in the college of medicine. The Children's Hospital Research Foundation, which is a gift from the late William Cooper Procter, has extended the research and teaching facilities of the department of pediatrics. At the Hamilton County Tuberculosis Hospital, all senior students receive instruction in the treatment of tuberculous patients. At the Chronic Disease Hospital of Hamilton County 7 miles north of the medical college a course in geriatrics is offered as an elective to the senior class.

The Cincinnati General Hospital, the buildings of which are shown in the illustration (No. 1 to No. 21 inclusive) occupies 27 acres of ground. The chief of staff is the dean of the college of medicine. The hospital staff comprises members of the faculty of the college of medicine. The Holmes Hospital is a memorial to the late Dr. Christian R. Holmes under whose influence and leadership the campaign to build a new city hospital and medical college was carried out. The Holmes Hospital provides for the care of private patients and its professional privileges are restricted to the faculty of the college of medicine. Among the other facilities of the school is the Longview Hospital for the Insane, where classes in psychiatry are conducted during the first three months of each year. The Child Guidance Home is also used for teaching psychiatry. The medical school is represented on the Council of Social Agencies and is intimately associated with all the welfare organizations of Cincinnati.

Several libraries are available to medical students, the library of the College of Medicine, the library of the Cincinnati General Hospital one of the finest collections in the Midwest, the general library of the University of Cincinnati, the Library of the Children's Hospital Research Foundation, the Library of the William G. Merrell Company, the Charlotte R. Fischer Library and the Library of the Biological Chemistry Department. The Lloyd Library, which is available to research workers, is the private library of the late Dr. John Uri Lloyd and Mr. C. G. Lloyd, which con-

tains more than 30,000 volumes, many on pharmacology and pharmaceutic chemistry.

Candidates for admission to the freshman class of the University of Cincinnati College of Medicine must have finished three years of college work. Students who are legal residents of Cincinnati are charged $485 tuition a year; students who are not legal residents of the city are charged $535. A person is not considered a resident unless he has been a bona fide resident of the city for one year preceding the date of his enrolment. A student remains a nonresident even though he has been in the city one year so long as his parents have not established residence in Cincinnati. There is also a student activity fee of $10 for freshmen who do not possess an undergraduate degree; a breakage fee for freshmen and sophomores of $15 and for juniors $10. Each student at the beginning of the first semester of the freshman year must provide himself with a microscope.

The faculty has 462 members, of whom 147 are professors, associate and assistant professors and 315 instructors.

The college of medicine, while a part of the municipal university, does not receive any funds from taxation; it is dependent on the income from its endowment and from tuition fees for its budget.

Washington University

The seventh annual Leo Loeb Lecture, sponsored by the chapter of Phi Beta Pi fraternity at Washington University School of Medicine, St. Louis, was delivered, March 23, by Dr. John H. Musser, professor of medicine at Tulane University School of Medicine, New Orleans, on "The Heart That Is Getting Old." The psychologic seminar group at this school was addressed on March 16 by Heinrich Klüver, Ph.D., of the University of Chicago, on "Recent Investigations on Brain Mechanisms and Behavior," illustrated with moving pictures.

The summer quarter will begin on July 11 for the freshmen, who will then continue on into the fall quarter without vacation. The upper three classes will register on June 13 and will have brief vacations in August and September.

Course in Medical Physics at California

The University of California has instituted a course in medical physics for undergraduate students, designed to teach the medical and biologic aspects of the sciences growing out of the atom smashing cyclotron and to teach research men in various fields how to use this new scientific tool. The course is given under the auspices of the department of physics, and the lecturers are members of the Radiation Laboratory staff. A new Medical Physics Building in which scientists experimenting with cyclotron products will work is nearing completion on the Berkeley campus. The cyclotron was developed at the University of California.

Indiana Fraternity Sponsors Lecture

The chapter of Nu Sigma Nu fraternity at Indiana University Medical School, Indianapolis, sponsored a lecture at the James Whitcomb Riley Hospital which was delivered by Dr. Charles G. Johnston of Detroit on "Control of Distention in the Therapy of Intestinal Obstruction." Preceding the lecture a dinner was given in honor of Dr. Johnston, the faculty members and presidents of the medical fraternities and the following guests: Dr. Maynard A. Austin of Anderson, president of the Indiana State Medical Association, and Dr. Carl H. McCaskey, Indianapolis, president-elect.

Alpha Omega Alpha at Cornell

The chapter of Alpha Omega Alpha, honorary medical society, at Cornell University Medical College, New York, held its initiation banquet, March 12, at the Hotel Wellington. Dr. Thomas H. Ham of the Boston City Hospital spoke on "Pathological Mechanisms in Hemolytic Anemia." The following were elected members of the society this year:

O. Whitmore Burtner Jr., New York.
Bruce M. Esplin, Miami Beach, Fla.
William A. Geohegan, Dayton, Ohio
Vincent A. Gorman, Kingston, N. Y.
Carlton C. Hunt Jr., New York.
Katherine W. Swift, Whitinsville, Mass.
W. Francis Whitmore, Amityville, N. Y.
Robert D. Deans, Ridgewood, N. J.
Francis S. Greenspan, Perth Amboy, N. J.

History of Medicine Society at Tulane

The History of Medicine Society at Tulane University of Louisiana School of Medicine, New Orleans, held its ninth annual meeting in Hutchinson Memorial Auditorium on May 6, together with the Medical Library Association. Dr. Abraham Levinson of Chicago gave an address on "Medical Medallions." At the banquet of the History of Medicine Society preceding this meeting H. S. Mayerson, Ph.D., of the department of physiology at Tulane spoke on "Cultural Pursuits of the Physician." The Rudolph Matas prize for the best student essay was presented by Dr. B. Bernard Weinstein to J. V. Schlosser, a senior, and the Lemann Prize for the best student discussion to Winston C. Hibner, a senior. Dr. Harold Cummins of the department of anatomy spoke on the history of medicine. Walter Trautman Jr. was toastmaster.

The Wyckoff Lectures

Dr. Richard P. Strong, professor emeritus of tropical medicine, Harvard Medical School, Boston, delivered the fifth series of the John Wyckoff Lectures at the New York University College of Medicine, New York, March 24-25, on "Tropical Diseases and the War." The lectures were established by the Phi Delta Epsilon fraternity in 1937 in memory of the late Dr. John H. Wyckoff, who at the time of his death was dean of New York University College of Medicine.

Annual Undergraduate Day at George Washington University

The Undergraduate Medical Association of George Washington University School of Medicine, Washington, D. C., held its fourth annual student day meeting for the presentation of student research on April 18. All medical classes were suspended in favor of the meeting. The guest speaker was Major W. Randolph Lovelace, Medical Corps, U. S. Army, director of physiologic research and consultant in surgery, Army Air Corps, who discussed the medical aspects of high altitude flying.

Charter Members of Honorary Society

Seven senior students of Wayne University College of Medicine, Detroit, in recognition of their scholarship, have been named charter members of the newly installed chapter of Alpha Omega Alpha, honorary medical society. Those named are John G. Bielawski, Richard E. Bower, Herbert W. Devine, James R. Doty, Charles J. France, Donald B. Jury and Donald R. Simmons. Future membership in the society will come from the senior class each June, the highest ranking 10 per cent being eligible.

Harvard Students Survey Curriculum

A committee of students from all classes at Harvard Medical School, Boston, under the chairmanship of senicr student Tom Perry and sophomore student Jack Cannon, has been gathering constructive student criticism of courses to aid the faculty in making changes in the curriculum. Some years ago a curriculum survey was made by a group of students. The results were welcomed by the faculty and many of the courses ordered changed to conform with the student opinion.

Fraternity Sponsors Snow Miller Lectures

Dr. Edgar M. End, Wauwatosa, Wis., instructor in physiology at Marquette University School of Medicine, delivered the fifteenth annual William Snow Miller Lecture on March 24 in the Service Memorial Institute, University of Wisconsin Medical School, Madison, under the auspices of Phi Beta Pi. His subject was "Recent Advances in Our Knowledge of Respiration and Their Application in Respiration Therapy."

Dr. Herbert Evans to Deliver Sigma Xi Lectures

The society of the Sigma Xi, of which George A. Baitsell, Yale University, New Haven, Conn., is secretary, announces that Dr. Herbert M. Evans, director of the Institute of Experimental Biology, University of California, Berkeley, will deliver a Sigma Xi lecture on the pituitary gland in about nineteen colleges and universities between March 24 and May 18.

Dr. Spies Lectures to Premedical Students

Under the auspices of the University of Alabama chapter of Alpha Epsilon Delta, national honorary premedical fraternity, Dr. Tom D. Spies of the University of Cincinnati College of Medicine recently lectured on "Pellagra and Other Diet-Deficiency Diseases in the South" before the students at the University of Alabama, University. Dr. Spies is head of a research group now working at Hillman Hospital, Birmingham, Ala.

Larger Freshman Class at Wayne

Wayne University, Detroit, announces that the college of medicine, which usually has no summer session but operates on a straight academic year system, will admit a new freshman class June 22, with provisions for seventy-five entering students instead of the customary sixty-five. Medical students will begin another academic year early in 1943.

Lecture to Premedical Students

The premedical students at the Louisiana State University, New Orleans, were addressed recently by Dr. Beryl I. Burns, dean and professor of anatomy at Louisiana State University School of Medicine, New Orleans, on "the Position of Premedical Students in Relation to the National Emergency." The lecture was sponsored by the honorary premedical fraternity Beta Tau Mu.

The McCoy Lectureship

Dr. Arno B. Luckhardt, professor of physiology at the University of Chicago School of Medicine was the speaker at the annual McCoy lectureship at Louisiana State University School of Medicine, New Orleans, February 15. The subject was "William Beaumont and the Medical Epic of the Northwest Territory." This lecture, in honor of Dr. George W. McCoy, is sponsored by the local chapter of Phi Beta Pi.

Increased Enrolment at Indiana

The freshman class at Indiana University School of Medicine, Bloomington, is said to be the largest in several years. The class selected last spring by a committee of twelve faculty members numbered one hundred and forty, an increase of ten to help meet the demands being made on the medical profession by the defense program.

New York University

The Student Council of New York University College of Medicine, New York, has established a periodical called *Newsletter*, in which it was said that the council has established a committee on defense activities, with representatives from each class and organization in the medical school. The committee will act as a liaison to bring together ideas on student defense and to put approved plans in operation.

Senior Wins Award

George D. Cummings, a senior at Wayne University College of Medicine, Detroit, has won the annual Walter J. Wilson I Award for his paper entitled "Natural Immunity to Diphtheria," which was based on the incidence of diphtheria among children in state institutions. This award is presented annually to the Wayne student whose paper based on original research is adjudged the best for the year.

"DO YOU KNOW WHAT PHYSICIAN"

Following is the answer to the question appearing on page 300:

William Maxwell Wood (1809-1880). An act of Congress of March 3, 1871 provided that the "chiefs of the Bureaus of Medicine and Surgery . . . shall have the relative rank of commodore, while holding said position, and shall have respectively the title of surgeon general. . . ." Dr. Wood was born in Baltimore and appointed assistant surgeon in the Navy in 1829. According to Capt. Louis H. Roddis, M. C., U. S. Navy, in his paper in the *Military Surgeon*, March 1942, Dr. Wood served in the Navy during the period concerned with the suppression of piracy, the slave trade, the Seminole War and the Mexican and Civil wars. His book "Wandering Sketches" gave an account of his travels. He was appointed chief of the Bureau of Medicine and Surgery by President Grant in 1869 and was retired for age on May 27, 1871. He continued to hold office as surgeon general until October 25 of that year and after ceasing to be surgeon general was employed until April 1, 1873 as medical inspector general of hospitals and fleets. Dr. Wood had a vigorous intellect, force of character, strong common sense and perseverance for any measure likely to improve the well-being of officers and men of the Navy. Among other tours of foreign duty he accompanied a squadron of naval vessels in 1856 concentrated at Hong Kong to protect American interests. An attack was made on the forts below Canton, China. Dr. Wood cared for the wounded after this engagement in a hospital in Hong Kong, where it was necessary to land marines to protect the wounded. At this time the European owner of a bakery attempted to poison the people of Hong Kong by placing arsenic in bread that was made in his bakery. Thousands were thus poisoned, but Dr. Wood escaped as he ate bread from another source. All his patients became ill with arsenic poisoning, but none of them died. Dr. Wood died at his home in Owings Mills in Baltimore County, Md.

Adios

Book Notices

What Are the Vitamins? By Walter H. Eddy, Ph.D., Professor of Physiological Chemistry, Teachers College, Columbia University, New York. Cloth. Price, $2.50. Pp. 247, with illustrations. New York: Reinhold Publishing Corporation, 1941.

To a large extent investigators have not been kind to their readers. In a rapidly developing field particularly it is often impossible for a practitioner to obtain the information he wants without the sacrifice of an inordinate amount of time and energy. For the persons who desire to acquire a working knowledge of the vitamins, the present book will be useful. There are brief summaries of each of the important vitamins and there are selected references in the bibliography of each chapter. The value of the book is enhanced by the inclusion of a table of the vitamin values of foods and by a list of different vitamin units and their equivalence. There also is a list of vitamins that have been chemically identified and those which have been characterized on the basis of physiologic evidence but which have not yet been isolated or identified chemically. The author has succeeded in the difficult task of condensing the story of the vitamins without sacrifice of accuracy.

Aids to Anæsthesia. By Major Victor Goldman, L.R.C.P., M.R.C.S., D.A., Anæsthetist, Queen Mary's Hospital, Stratford. Cloth. Price, $1.75. Pp. 235, with 58 illustrations. Baltimore: Williams & Wilkins Company; London: Baillière, Tindall & Cox, 1941.

This pocket size manual is published as a contribution to a "students' aid series" for "English students in grouping and committing to memory subjects upon which they are to be examined," while offering to the English general practitioner a means of "brushing up" on a special subject. The preparation of an abbreviated or "outline" treatise on any subject is recognized as one of the most difficult tasks in medical writing. Major Goldman is to be congratulated on having covered a great deal of ground in this new addition to the students' aid series. For the American physician, who in the present world conflict may be assigned to duty in anesthesia with British forces, this addition to the series will prove invaluable. It offers briefly and in an easily assimilable form information as to differences in methods for the relief of pain current in British practice. Popular technics are described in detail. The appendix contains useful tables of equivalents and other data highly practical and time saving, especially to an American physician not familiar with British practice and British nomenclature. Minor variations in the concepts of fundamental principles and of technical applications held by British physicians, as compared with American, are evident. However, the sentence at the beginning of the preface, quoted from an American physician, "No anesthestic agent is safer than the person who employs it," probably expresses the feeling of all anesthetists everywhere. Styles in the details of practice, like those in women's hats, vary with different seasons and different countries. As an aid to anesthetists in either civil or military practice in America, Goldman's book will prove of limited value. The anesthetist practicing in the United States will, however, appreciate it as an invaluable reference work which will answer questions arising in the course of his reading of current literature of British origin.

Gynaecological Operations. By J. Lyle Cameron, M.D., F.R.C.S., F.A.C.S., Senior Gynaecological Surgeon, Royal Waterloo Hospital, London. Cloth. Price, $5.50. Pp. 200, with 26 illustrations. New York & London: Oxford University Press, 1941.

The author states that the purpose of this book is "to present the technic of gynecologic operations as clearly and concisely as possible, giving the indications and contraindications and pointing out difficulties, dangers and complications against which the surgeon must be warned." This he has accomplished, if it can be accomplished, in the close space of two hundred pages. The use of radium is not discussed, but other ordinary gynecologic procedures are dealt with in proper proportion. One wishes more illustrations had been possible. This is a good book, there is no doubt of that. It is harder to decide just whom the book will be good for. An experienced gynecologist will hardly require it; a student gynecologist needs a more extensive treatise. It is too advanced for medical students or nurses. The volume may be especially useful to the general surgeon who wishes a quick review of some gynecologic procedure before undertaking it.

The Public Health Nurse in Action. By Marguerite Wales, R.N., F.A.P.H.A., Nursing Education Consultant, W. K. Kellogg Foundation, Battle Creek, Michigan. With a foreword by Lillian D. Wald. Cloth. Price, $2.75. Pp. 437, with illustrations. New York: Macmillan Company, 1941

This tells what public health nursing is by a series of case studies drawn from all the varied types of service—maternity, infant and preschool, school, communicable diseases, tuberculosis, orthopedic, venereal disease, industrial and the care of the chronically ill. Under each special service discussed there is an analysis of the problem and the progress made to date toward its solution. This discussion is made graphic by the inclusion of well told case stories. The responsibilities of the public health nurse to the family in its entirety are stressed, and each case story emphasizes her effort toward attaining the objective of greater family independence, social and economic. In every instance the case stories are success stories and, while the author points this out in her introduction, one cannot but get a feeling of the Horatio Alger as one reads. Perhaps after Dr. Derryberry's various treatises on the subject, this emphasis on accomplishment is heaven sent.

The Avitaminoses: The Chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases. By Walter H. Eddy, Ph.D., Professor of Physiological Chemistry, Teachers College, Columbia University, New York, and Gilbert Dalldorf, M.D., Pathologist to the Grasslands and Northern Westchester Hospitals, Westchester County, New York. Second edition. Cloth. Price, $4.50. Pp. 519, with 69 illustrations. Baltimore: Williams & Wilkins Company, 1941.

In this edition the material has been brought to date and the book has been considerably enlarged. The material on the vitamin B complex alone now covers about a hundred and fifty pages. There is included a section on vitamin K. The appendix includes descriptions of methods of studying the avitaminoses. There are tables of vitamin values of foods. It should be a useful volume for those wishing a fairly concise statement of the chemistry and pathology of the vitamins.

A History of Medical Psychology. By Gregory Zilboorg, M.D., in collaboration with George W. Henry, M.D. Cloth. Price, $5. Pp. 606, with 21 illustrations. New York: W. W. Norton & Company, Inc., 1941.

There have been many histories of neurology and psychiatry but few with the scope of this volume. Indeed, its more than six hundred pages and its somewhat involved approach to the subject make it primarily a work of reference for those especially interested in the field rather than for the general reader. Obviously, of greatest importance is the evaluation of the freudian technic and the author's plea for tolerance in relationship to new discoveries in this field. The volume is supplemented by a brief consideration of organic mental diseases by Dr. George W. Henry.

Principles and Practice of Biological Assay. By James M. Dille, Ph.D., Department of Pharmacology, College of Pharmacy, University of Washington, Seattle. Third revision. Paper. Price, $1.75. Pp. 75, with illustrations. Seattle: University of Washington, 1940.

In this mimeographed manual designed for student use there are provided instructions for the assay of cardiac stimulants, cardiac depressants, epinephrine, ergot preparations, posterior pituitary, insulin, local anesthetics, autonomic drugs, opiates, central nervous system stimulants and vitamins. The appendix provides some information on the methods for the determination of blood sugar and the examination of tissues for poisons.

Photelometric Clinical Chemistry. By William S. Hoffman, Ph.D., M.D., Professor of Physiological Chemistry, The Chicago Medical School, Chicago. Cloth. Price, $3. Pp. 254, with 27 illustrations. New York: William Morrow & Company, 1941.

This book provides a description of blood chemical determinations with the use of the Cenco-Sheard-Sanford photelometer. It should be of value to those who use this instrument.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

SEA WATER ENEMAS

***To the Editor:*—I have been told that a person's fluid balance can be maintained by retention enemas of sea water. Could you furnish references or opinions on this subject?**

Richard F. Halford, M.D., Fort McPherson, Ga.
First Lieutenant, M. C., U. S. Army.

ANSWER.—The salt content of sea water varies somewhat with the area from which it is taken, especially in relation to parts of the ocean near the entrance points of large rivers, but it is a distinctly hypertonic solution approximating a 3 per cent saline solution. From present knowledge of osmosis one would deduce that if sea water was introduced into the rectum and colon it would be abstracted from the body in states of health and dehydration. In the *British Medical Journal* (**1**:220 [Feb. 16] 1918) Mr. Morley Roberts gave a view on the subject held by him since 1910, namely that sea water given by rectum might give up water to the body. His ideas were unsubstantiated by either experimental or personal observations, and his reasoning is untenable in the light of present day knowledge. However, he buttressed his contention by a recital of the personal experience of a Mr. R. Graham during a transatlantic voyage in 1916. The history of Mr. Graham's fast supplemented by rectal instillation of sea water is given without detail and of course without control. In Surgical Treatment, by J. P. Warbasse (Philadelphia and London, W. B. Saunders Company, vol. III, p. 58), this reference is cited and the ideas are restated without further proof of the soundness of the facts. In order to test this theory the following experiment was carried out: A healthy man aged 26 began a total fast and was kept under constant conditions of temperature and humidity. On the second day he experienced mild thirst and much hunger. The urinary output was 440 cc. On the third day there were severe thirst and dryness of the throat, and the output of urine was 325 cc. in twenty-four hours. The nonprotein nitrogen level was 46.9. At noon slow proctoclysis of 1,000 cc. (1,024 Gm.) of artificial sea water was given. Within thirty minutes he complained of abdominal cramps. Infusion was stopped, and he expelled 346 Gm. of liquid material. There remained in the enema can 694 Gm. of fluid. (Part of this was reflux from the rectum.) At 3 p. m. the subject was more comfortable, and a second attempt was made with him in the knee-chest position, 250 cc. (266 Gm.) of sea water being instilled slowly into the rectum. Within fifteen minutes the subject had cramping abdominal pain and expelled 266 Gm. of liquid material containing a small amount of solid feces. Thirst continued and became worse. Analysis of the fluid expelled from the rectum showed it to be more dilute than that injected. The experiment was concluded by the subject, and the conclusion derived from it was that there was no selective absorption of water from sea water administered by rectum to a subject in a moderate state of true dehydration produced by fasting and abstinence from water. This conclusion bears out current views on the diffusion of fluids and electrolytes through a permeable membrane.

HEALTH HAZARD FROM TRINITROTOLUENE

***To the Editor:*—I have had a number of inquiries from my patients regarding the likelihood of any injury, temporary or permanent, because of their contact with trinitrotoluene while working at the munition plant. Could you enlighten me on the subject?** **Edwin R. Talbot, M.D., Joliet, Ill.**

ANSWER.—Trinitrotoluene, or TNT, is a high explosive with definite toxic properties. Workers in contact with trinitrotoluene may be poisoned if conditions are favorable for the absorption of this substance through the skin or through the respiratory passages. Dermatitis is not infrequent but usually is not especially severe. Mild poisoning produces such symptoms as headache, gastric disturbances, nausea and cyanosis. Blood changes, especially red cell abnormalities and anemia, are said to be the most reliable indication of incipient poisoning. Toxic jaundice and, more rarely, aplastic anemia, were responsible for many deaths among trinitrotoluene workers in the first world war.

Persons who have a history of liver disease, anemia, bronchitis or asthma should not, as a rule, be allowed to work where there is exposure to trinitrotoluene. It is most important that trinitrotoluene workers avoid alcohol.

Sometimes the damage to the liver does not show up for several months after exposure has ceased, but as a rule there is no permanent injury to health which does not become apparent during or shortly after the exposure.

The majority of large munitions plants in this country are aware of the health hazard from trinitrotoluene and are controlling it by preventing the absorption of excessive amounts and by frequent medical examinations of employees. The probability of workers in such plants becoming seriously poisoned by trinitrotoluene is not great.

Another explosive which is frequently handled in munitions plants is trinitrophenylmethylnitramine, commonly called tetryl. It is not believed that this substance causes systemic poisoning, but it is extremely irritating to the skin and workers with it frequently suffer a high incidence of dermatitis.

Further information on this subject can be obtained from the Division of Industrial Hygiene of the U. S. Public Health Service.

References:

Roberts, Harry M.: The TNT Health Hazard, *Brit. M. J.* **2**:647 (Nov. 8) 1941.

Minot, George R.: Blood Examinations of Trinitrotoluene Workers, *J. Indust. Hyg.* **1**:301 (Oct.) 1919.

Voegtlin, Carl; Hooper, Charles W., and Johnson, J. M.: I. Trinitrotoluene Poisoning—Its Nature, Diagnosis and Prevention, Bull. 126, Hyg. Lab., U. S. P. H. S., September 1920, pp. 7-182.

USE OF NEGRO BLOOD FOR BLOOD BANKS

***To the Editor:*—I have observed recently considerable agitation about the alleged discrimination against Negroes with regard to the use of their blood for the so-called blood banks for war purposes. Is there any definite basis in serology, pathology or hematology for the aversion to the use of their blood? Is the greater incidence of syphilis in the Negro race a factor in this aversion? Is present knowledge sufficiently complete with reference to all the blood elements for one to be able to say without contradiction that the use of Negro blood for blood banks is 10C per cent safe?** **S. Robert Thau, M.D., Brooklyn.**

ANSWER.—Numerous chemical and serologic investigations have yielded no evidence that the blood of one race can be distinguished from that of another. Manoiloff (*München. med. Wchnschr.* **72**:2186 [Dec. 18] 1925), a Russian investigator, devised for the differentiation of races a chemical test of the blood based on oxidation reactions, color changes in dyes serving as indicators. He and his colleagues claimed that they were able to distinguish by this method the blood of Russians, Jews and Ukrainians, but subsequent investigations by other workers have failed to substantiate their conclusions. The test was not applied to distinguish Negroes and Caucasians. This particular problem has been investigated chiefly by immunologists. Bruck (*Berl. klin. Wchnschr.* **44**:793, 1907) stated that by means of complement fixation tests he could distinguish the serum of a Caucasian, a Negro, a Malayan, a Chinese and an Arab. His experiments were repeated by many investigators, especially Marshall and Teague (*Philippine J. Sc.* **3**:357, 1908), Fitzgerald (*J. M. Research* **21**:41, 1909) and Landsteiner and Miller (*J. Exper. Med.* **42**:841 [Dec.] 1925), none of whom could corroborate his data. Using the serum of a Caucasian, a Negro, a Japanese, a Negrito and a Tagalog as antigens for comparison, Marshall and Teague could find no difference among them. Fitzgerald, in similar experiments, used the serum of a Caucasian, a Japanese and a Negro and obtained results that led him to say that "the existence of specific (serologic) differences has not been proven." Landsteiner and Miller, on repetition of Bruck's experiments, stated that if serologic differences exist between Negroes and white persons they are much smaller than those between man and the anthropoid apes. The significance of this statement is shown by the difficulty experienced by Nuttall in distinguishing between the primates and man by means of the precipitin test. In a review, Landsteiner wrote that the only serologic peculiarities observed are those concerning isohemagglutinins and that these are not such as to demonstrate the existence of slight but regular differences by which the race of an individual could be ascertained but have only statistical significance and deal with the frequency of certain properties. In this respect these serologic qualities are comparable to more or less distinguishing but not always constant attributes of a race, like the color of the eyes or hair or body weight. Wiener (Blood Groups and Blood Transfusion, Springfield, Ill., Charles C. Thomas, 1938) reached a similar conclusion as to the general failure to disclose race specific antigens. He stated: "Attempts have also been made to produce sera which would serve to differentiate the blood of different races of the human species. Thus far all attempts have failed." There is, therefore, no factual basis for the discrimina-

tion against the use of Negro blood or plasma for injection into white people. Since syphilitic blood is eliminated from use for this purpose by thorough serologic testing, the rate of syphilis in Negroes is of no concern in this connection. The transfusion of Negro blood into white persons and that of white persons into Negroes has been repeatedly performed in civil practice without any evidence of harm or aversion on the part of the recipients. The present agitation arises from the inopportune publication of orders prohibiting the inclusion of Negro plasma in the proposed military plasma bank. The aversion perhaps represents the persistence of the ancient folklore that one's personality is closely associated with one's blood. Frequently used clichés, such as "noble blood," are remnants remaining in the language from a day when such superstitions were more prevalent than they now are. Blood transfusions were originally practiced with the blood of stockyard animals. This practice was discontinued, not because of an aversion to the source of the blood, but because of severe and frequently fatal intravascular reactions. Patients repeatedly receive into the veins serum from rabbits, horses, sheep and other lower animals. These substances are received with an equanimity that is completely inconsistent with the aversion often associated with the injection of blood as much like that of the recipient as two substances can be.

A VAT FOR CADAVERS

To the Editor:—I am having considerable difficulty keeping a cadaver preserved, since I have been unable to get a vat which is leakproof. I lined one with sheet metal and painted this sheet metal with Kodacoat on the advice of the Eastman Kodak Company. I was informed that Kodacoat is capable of withstanding chemical action of all kinds, but I found that this is an error. The Kodacoat lasted only a short time, and the metal beneath was shortly attacked and as a consequence my solution is blackened and ultimately I shall lose it. What is the best and cheapest method of making a vat?

M.D., Texas.

ANSWER.—About the only material, apart from porcelain or glass lined metals, that will withstand corrosion by embalming or preserving fluids for cadavers is monel metal with the joints welded or soldered with hard solder. If a tank made of heavy sheet monel is strengthened by outer iron braces riveted to the sides, the rivets must be monel also, since galvanized iron or even heavy tin will eventually scratch through and rust.

The embalming fluid, however, should contain no formaldehyde or the cadaver may turn green (copper and nickel salt). The most satisfactory embalming fluid consists of equal parts of phenol (crystals), glycerin and denatured (without formaldehyde) ethyl alcohol.

Three to 5 per cent (crystals) in tap water is satisfactory as a preserving fluid. This solution will gradually darken but need not be renewed oftener than once a year, provided the monel cover fits fairly well.

BLOOD ALCOHOL DETERMINATION OF DRUNKENNESS

To the Editor:—I should appreciate some information regarding findings in blood alcohol determination. What would be considered the line of demarcation between sobriety and drunkenness? Could a finding of 1.0 to 1.5 mg. per cubic centimeter (0.10 to 0.15 per cent) be so considered? Would a finding of 3.25 mg. per cubic centimeter (0.325 per cent) in the blood be considered as "very drunk"? Since alcohol produces stimulation and then depression, would you consider one who remains in an excitable state, with his memory still functioning after a five hour bout of drinking and able to attack ten armed men with his bare fists, as being under the influence of drugs, such as cocaine or marihuana, along with the alcohol?

Albert V. Anderson, M.D., Fort Devens, Mass.
Captain, M. C., U. S. Army.

ANSWER.—There is no distinct line of demarcation between sobriety and drunkenness. However, there is a broad band of alcoholic percentage below which demonstrable alcoholic influence is unlikely and above which such influence is universal.

The American Medical Association Committee for the Study of problems of Motor Vehicle Accidents has recommended the following interpretation of the results of chemical tests for alcohol:

1. Although there is no minimal figure which can be set at which there will be absolutely no effect from alcohol, the committee recommends that persons with a concentration of alcohol of less than 0.05 per cent by weight in blood or its equivalent in urine, saliva or breath should not be prosecuted for driving while under the influence of alcoholic liquor.

2. All persons show a definite loss of that clearness of intellect and control of themselves which they would ordinarily possess when the concentrations are above 0.15 per cent in the blood or its equivalent in other body fluids or breath and should therefore be considered as under the influence.

3. When the alcohol concentrations are between 0.05 and 0.15 per cent in the blood, a great many persons will be under the influence of alcohol, but the committee recommends prosecution only when the circumstances and results of physical examination give definite confirmation of such influence.

An individual harboring 0.325 per cent of alcohol is unquestionably and definitely under the influence, although he may be able to coordinate well enough to engage an enemy vastly superior in numbers and equipment. The attack might be all the more effective because of the apparent sobering effect due to the increased secretion of epinephrine during the excitement. However, there can be no doubt that the aggressor's judgment is decidedly faulty in accepting such odds.

It is true that other drugs, particularly marihuana, might contribute to the man's recklessness, but the alcohol alone could account for his "courage."

TUMOR OF THE EYELID

To the Editor:—A Negro woman aged 19 with a positive Wassermann reaction has an enlargement about the size of an almond kernel in the inner half of the right upper eyelid. This tumor-like structure is soft, and on one's placing a finger tip on it a thrill, synchronous with the pulse, is distinctly noted; in fact, the thrill is so pronounced that it suggests a sensation that might be produced by an electric current. The enlargement has not increased in size within the last several months, and it does not occasion any more discomfort or inconvenience than would arise from partial ptosis. The condition appears to be an arteriovenous aneurysm, but the vessels of the lids are normally so small that I am wondering if this is possible.

S. J. Lewis, M.D., Augusta, Ga.

ANSWER.—If the enlargement mentioned is confined to the lid and has no visibly enlarged vessels leading into it on the skin or conjunctival side it is most unlikely that it is an aneurysm. It seems most likely that it is a chalazion. Such granulomas are common in the Negro race and reach a large size. The thrill synchronous with the pulse is probably transmitted through the lid from the globe, and the nodule may amplify the feeling of thrill. It should be possible to feel the thrill when placing the finger on the globe through the lid at some distance from the nodule, as pulsation of the globe with the pulse is not very rare and is due to pulsation of vessels in the orbit. It is possible that the nodule is a syphilitic granuloma, but these growths are rare in the lid. If it is a chalazion it should show a slightly lighter area on the tarsal surface along a meibomian gland. Incision and curettage of the nodule through the conjunctiva should completely remove the swelling if it is a chalazion.

ALCOHOL PACKS FOR INFECTED WOUNDS

To the Editor:—What is the difference in effect on living tissue of ethyl alcohol and isopropyl alcohol? I am using Ochsner's solution or a diluted solution of alcohol and boric acid as a moist pack in treating infections. Can I use isopropyl alcohol, for instance in the form of Mifflin's Bathing Compound, interchangeably with grain alcohol in these solutions for moist packs on open wounds?

M.D., Minnesota.

ANSWER.—The use of ethyl alcohol in wounds is a procedure of doubtful wisdom. The stronger solutions which are bactericidal are painful and injurious; the weaker solutions (Ochsner's solution contains about 30 per cent ethyl alcohol) have little or no germicidal action in wounds, yet they may be capable of precipitating tissue proteins, stimulating inflammatory reaction and delaying the process of repair.

Propyl alcohol is equally objectionable. In vitro and on skin it possesses somewhat greater antibacterial power than analogous solutions of ethyl alcohol, but it is not known whether this is so in infected wounds also. Theoretically, the very qualities on which the superiority of propyl alcohol depends—ability to precipitate proteins, fat solvency and low surface tension—render it the more harmful to the tissues of wounds.

Neither ethyl nor propyl alcohol, used in the form of moist packs, approaches the ideal in the treatment of infected wounds, which is to eliminate the infectious micro-organisms without injury to the tissues or retardation of healing.

POSSIBLE DEATH FROM "ETHER CONVULSIONS"

To the Editor:—In Queries and Minor Notes in The Journal, March 14, there appeared a letter regarding ether convulsions. I noticed that in the answer it stated there was no specific treatment for this condition. On more than one occasion I have seen Dr. John Lundy, the head of the department of anesthesia in the Mayo Clinic, meet just such a situation with the intravenous use of pentothal sodium, which promptly relieved the convulsions. In each instance, the patient went on to an uninterrupted recovery. I thought this might be of some interest in view of the fact that, although ether convulsions are not common, they are also not so uncommon as is seemingly appreciated.

Lester R. Chauncy, M.D., Portland, Ore.